PHILIPS 30PF9975

MODEL

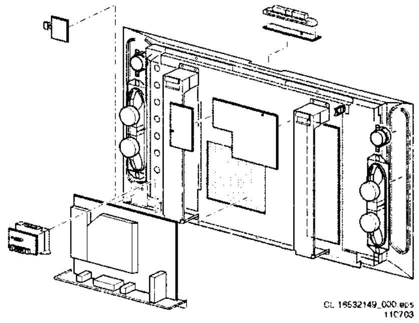
SERVICE MANUAL

PHIL-05679

Colour Television **Chassis**

FTL13E
AA & AB

Service
Service
Service



Service Manual

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PHILIPS

1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:

1.1 Technical Specifications
1.2 Connections
1.3 Chassis Overview

Note: Figures below can deviate slightly from the actual situation, due to the different set executions.

1.1 Technical Specifications

1.1.1 Vision

Display type	:	TFT LCD, 15:9
Screen size	:	30-inch (76 cm)
Resolution (HxV)	:	WXGA 1280(*3)x768
Contrast ratio	:	350:1
Light output	:	450 cd/m^2
LCD response time	:	16 ms
Viewing angle	:	176 deg. (H)
	:	176 deg. (V)
Tuning system	:	PLL
Colour systems	:	PAL B/G, D/K, I
	:	SECAM B/G, D/K, L/L'
AV (playback only)	:	NTSC 4.43/3.58
Channel selections	:	100 presets
	:	UVSH
Aerial input	:	75 ohm, IEC-type
Dimensions (WxHxD) in mm	:	891x489x110

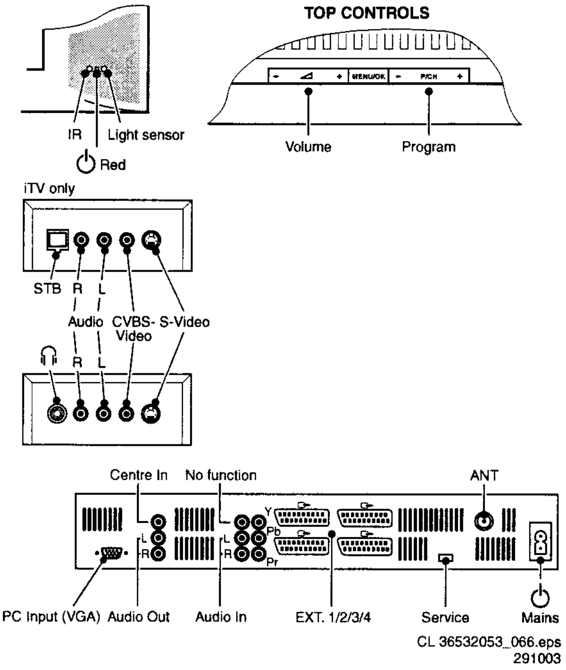
1.1.2 Sound

Sound systems	:	FM-mono, AM-mono
	:	2CS B/G, D/K
	:	NICAM B/G, D/K, I, L/L'
Maximum power	:	2 x 10 W_rms (int.)

1.1.3 Miscellaneous

Mains voltage	:	95 - 264 V_ac
Mains frequency	:	50 / 60 Hz
Ambient temperature	:	+5 to +45 °C
Maximum humidity	:	90 % R.H.
Power consumption	:	
- Normal operation	:	≈ 160 W
- Standby	:	< 2 W

1.2 Connections


TOP CONTROLS
MENU/OK
P/CH
Volume
Program
IR
Light sensor
Red
iTV only
STB
R
L
Audio
CVBS-Video
S-Video
R
L
Centre In
No function
ANT
Y
Pb
Pr
L
R
PC Input (VGA)
Audio Out
Audio In
EXT. 1/2/3/4
Service
Mains
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291003

Figure 1-1 Side I/O and rear connections

1.2.1 Side I/O (Left Bottom Side)

Hosiden: SVHS (Input)

1	-Y	Ground	⏚
2	-C	Ground	⏚
3	-Y	1 V_pp / 75 ohm	-⊖
4	-C	0.3 V_pp / 75 ohm	-⊖

Cinch (Input)

-CVBS	1 V_pp / 75 ohm	-⊖◎
-Audio - L	0.5 V_rms / 10 kohm	-⊖◎
-Audio - R	0.5 V_rms / 10 kohm	-⊖◎

Headphone (Output) (only for consumer TV sets)

-Headphone	32 - 600 ohm / 10 mW	🎧

STB (only for ITV)

-RJ-11	Only for ICONN	-⊖⊖→

1.2.2 Audio receiver (if present)

Audio - In (Cinch)

C	-Audio - Centre	-⊖◎

Audio - Out (Cinch)

R	-Audio - R	0.5 V_rms / 1 kohm	⊖→◎
L	-Audio - L	0.5 V_rms / 1 kohm	⊖→◎

Audio - Out (Cinch)

R	-Audio - R	0.5 V_rms / 1 kohm	⊖→◎
L	-Audio - L	0.5 V_rms / 1 kohm	⊖→◎

1.2.3 VGA

VGA (Input)

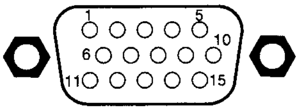


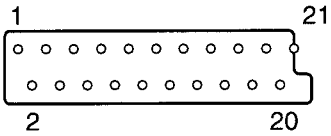
Figure 1-2 VGA Connector

1	- Red	0.7 V_pp / 75 ohm	→○
2	- Green	0.7 V_pp / 75 ohm	→○
3	- Blue	0.7 V_pp / 75 ohm	→○
4	-	Ground	⏚
5	-	Ground	⏚
6	-	Ground	⏚
7	-	Ground	⏚
8	-	Ground	⏚
9	- 5V_DC_OUT	+5 V_dc	○→
10	-	Ground	⏚
11	-	Ground	⏚
12	- DDC_SDA		→○
13	- H-sync	0 - 5 V	→○
14	- V-sync	0 - 5 V	→○
15	- DDC_SCL		→○

Cinch (Input)

- Audio - L	0.5 V_rms / 10 kohm	→○◎
- Audio - R	0.5 V_rms / 10 kohm	→○◎
- Y	0.7 V_pp / 75 ohm	→○◎
- Pb	0.7 V_pp / 75 ohm	→○◎
- Pr	0.7 V_pp / 75 ohm	→○◎

1.2.4 SCARTs



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171199

Figure 1-3 SCART connector

External 1: RGB/YUV and CVBS - In/Out

1	- Audio - R	0.5 V_rms / 1 kohm	○→
2	- Audio - R	0.5 V_rms / 10 kohm	→○
3	- Audio - L	0.5 V_rms / 1 kohm	○→
4	- Audio	Ground	⏚
5	- Audio	Ground	⏚
6	- Audio - L	0.5 V_rms / 10 kohm	→○
7	- Blue / U	0.7 V_pp / 75 ohm	→○
8	- CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	→○
9	- Video	Ground	⏚
10	- N.C.		
11	- Green / Y	0.7 V_pp / 75 ohm	→○
12	- N.C.		
13	- Video	Ground	⏚
14	- Video	Ground	⏚
15	- Red / V	0.7 V_pp / 75 ohm	→○
16	- Status / FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 ohm	→○
17	- Video	Ground	⏚
18	- Video	Ground	⏚
19	- CVBS-out	1 V_pp / 75 ohm	○→
20	- CVBS-in	1 V_pp / 75 ohm	→○
21	- Shielding	Ground	⏚

External 2: CVBS and SVHS - In/Out (for Recorder)

1	- Audio - R	0.5 V_rms / 1 kohm	○→
2	- Audio - R	0.5 V_rms / 10 kohm	→○
3	- Audio - L	0.5 V_rms / 1 kohm	○→
4	- Audio	Ground	⏚
5	- Audio	Ground	⏚
6	- Audio - L	0.5 V_rms / 10 kohm	→○
7	- C-out	0.7 V_pp / 75 ohm	○→
8	- CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	→○
9	- Video	Ground	⏚
10	- Easylink	(P50)	→○○→
11	- Green	0.7 V_pp / 75 ohm	→○
12	- N.C.		
13	- Video	Ground	⏚
14	- Video	Ground	⏚
15	- C-in	0.7 V_pp / 75 ohm	→○
16	- Status / FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 ohm	→○
17	- Video	Ground	⏚
18	- Video	Ground	⏚
19	- CVBS-out	1 V_pp / 75 ohm	○→
20	- CVBS-in	1 V_pp / 75 ohm	→○
21	- Shielding	Ground	⏚

External 3: CVBS - In

1	-	Ground	○→
2	- Audio - R	0.5 V_rms / 10 kohm	→○
3	-	Ground	○→
4	- Audio	Ground	⏚
5	-	Ground	⏚
6	- Audio - L	0.5 V_rms / 10 kohm	→○
7	- N.C.		
8	- CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	→○
9	- Video	Ground	⏚
10	- N.C.		
11	- N.C.		
12	- N.C.		
13	- Video	Ground	⏚
14	- Video	Ground	⏚
15	- N.C.		
16	- N.C.		
17	- Video	Ground	⏚
18	- Video	Ground	⏚
19	- N.C.		
20	- CVBS-in	1 V_pp / 75 ohm	→○
21	- Shielding	Ground	⏚

External 4: CVBS - In

1	-	Ground	⊖→
2	- Audio - R	0.5 V_rms / 10 kohm	→⊖
3	-	Ground	⊖→
4	- Audio	Ground	⏚
5	-	Ground	⏚
6	- Audio - L	0.5 V_rms / 10 kohm	→⊖
7	- N.C.		
8	- CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	→⊖
9	- Video	Ground	⏚
10	- N.C.		
11	- N.C.		
12	- N.C.		
13	- Video	Ground	⏚
14	- Video	Ground	⏚
15	- N.C.		
16	- N.C.		
17	- Video	Ground	⏚
18	- Video	Ground	⏚
19	- N.C.		
20	- CVBS-in	1 V_pp / 75 ohm	→⊖
21	- Shielding	Ground	⏚

Aerial - In

- IEC-type	Coax, 75 ohm	⊤

1.3 Chassis Overview

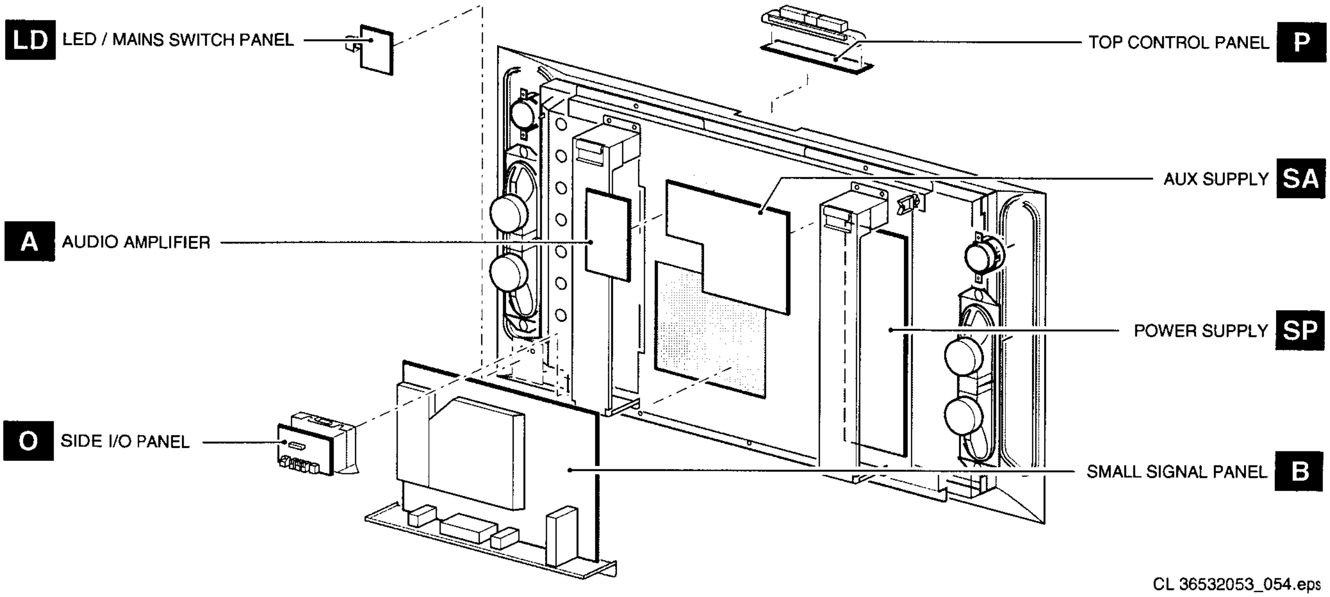
LD LED / MAINS SWITCH PANEL
A AUDIO AMPLIFIER
O SIDE I/O PANEL
TOP CONTROL PANEL P
AUX SUPPLY SA
POWER SUPPLY SP
SMALL SIGNAL PANEL B

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Figure 1-4 PWB location

2. Safety Instructions, Warnings, and Notes

Index of this chapter:
2.1 Safety Instructions
2.2 Warnings
2.3 Notes

2.1 Safety Instructions

Safety regulations require that **during** a repair:

- Connect the set to the Mains (AC Power) via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the Mains (AC Power) lead for external damage.
- Check the strain relief of the Mains (AC Power) cord for proper function.
- Check the electrical DC resistance between the Mains (AC Power) plug and the secondary side (only for sets which have a Mains (AC Power) isolated power supply):
  1. Unplug the Mains (AC Power) cord and connect a wire between the two pins of the Mains (AC Power) plug.
  2. Set the Mains (AC Power) switch to the "on" position (keep the Mains (AC Power) cord unplugged!).
  3. Measure the resistance value between the pins of the Mains (AC Power) plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
  4. Switch "off" the set, and remove the wire between the two pins of the Mains (AC Power) plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
  - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  - Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⏚), or hot ground (⏚), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).
- Where necessary, measure the waveforms and voltages with (⊓⊏) and without (⋊) aerial signal. Measure the voltages in the power supply section both in normal operation (①) and in stand-by (⏻). These values are indicated by means of the appropriate symbols.
- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.
- Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the "double-D symbol", are trademarks of Dolby Laboratories.

2.3.2 Schematic Notes

- All resistor values are in ohms and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are given in micro-farads ($\mu= x10^{-6}$), nano-farads ($n= x10^{-9}$), or pico-farads ($p= x10^{-12}$).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.3.3 Rework on BGA (Ball Grid Array) ICs

General
Although (LF)BGA assembly yields are very high, there may still be a requirement for component rework. By rework, we mean the process of removing the component from the PWB and replacing it with a new component. If an (LF)BGA is removed from a PWB, the solder balls of the component are deformed drastically so the removed (LF)BGA has to be discarded.

Device Removal
As is the case with any component that, it is essential when removing an (LF)BGA, the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature. A uniform temperature reduces the chance of warping the PWB.
To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area Preparation
When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.
Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent.
After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the (LF)BGA.
Note: Do not apply solder paste, as this has shown to result in problems during re-soldering.

Device Replacement

The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers.
To reflow the solder, apply a temperature profile according to the *IC data sheet*. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

More Information

For more information on how to handle BGA devices, visit this URL: *www.atyourservice.ce.philips.com* (needs subscription, not available for all regions). After login, select “Magazine”, then go to “Workshop Information”. Here you will find Information on how to deal with BGA-ICs.

2.3.4 Lead Free Solder

Philips CE is going to produce lead-free sets (PBF) from 1.1.2005 onwards.

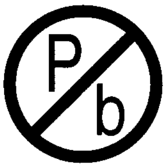

Figure 2-1 Lead-free logo

This sign normally has a diameter of 6 mm, but if there is less space on a board also 3 mm is possible.

Regardless of this logo (is not always present), one must treat all sets from this date onwards according to the following rules.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able
  - To reach at least a solder-tip temperature of 400°C.
  - To stabilise the adjusted temperature at the solder-tip.
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C - 380°C is reached and stabilised at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch “off” unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly to avoid mixed regimes. If not to avoid, clean carefully the solder-joint from old tin and re-solder with new tin.
- Use only original spare-parts listed in the Service-Manuals. Not listed standard material (commodities) has to be purchased at external companies.
- Special information for lead-free BGA ICs: these ICs will be delivered in so-called "dry-packaging" to protect the IC against moisture. This packaging may only be opened short before it is used (soldered). Otherwise the body of the IC gets "wet" inside and during the heating time the structure of the IC will be destroyed due to high (steam-)pressure inside the body. If the packaging was opened before usage, the IC has to be heated up for some hours (around 90°C) for drying (think of ESD-protection!).
  Do not re-use BGAs at all!
- For sets produced before 1.1.2005, containing leaded soldering tin and components, all needed spare parts will be available till the end of the service period. For the repair of such sets nothing changes.

In case of doubt whether the board is lead-free or not (or with mixed technologies), you can use the following method:

- Always use the highest temperature to solder, when using SAC305 (see also instructions below).
- De-solder thoroughly (clean solder joints to avoid mix of two alloys).

Caution: For BGA-ICs, you **must** use the correct temperature-profile, which is coupled to the 12NC. For an overview of these profiles, visit the website *www.atyourservice.ce.philips.com* (needs subscription, but is not available for all regions)
You will find this and more technical information within the "Magazine", chapter "Workshop information".
For additional questions please contact your local repair help desk.

2.3.5 Practical Service Precautions

- **It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- **Always respect voltages.** While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

3. Directions for Use

You can download this information from the following websites:
http://www.philips.com/support
http://www.p4c.philips.com

Help?
If this instruction manual does not give an answer or if 'Tips' do not solve your TV problem, you can call your Local Philips Customer or Service Centre. See the supplied World-wide guarantee booklet.
Please, have the Model and Product number which you can find at the back of your television set or on the packaging, ready, before calling the Philips helpline.

Model: 30PF9975
Product No: ....

Care of the screen
See Tips, p. 22.

End of life directives
Philips is paying a lot of attention to producing environmentally-friendly in green focal areas. Your new TV contains materials which can be recycled and reused. At the end of its life specialised companies can dismantle the discarded TV to concentrate the reusable materials and to minimise the amount of materials to be disposed of.
Please ensure you dispose of your old TV according to local regulations.

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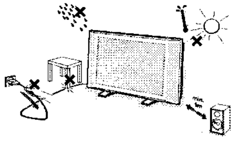
EasyLink features are based on the "one touch operation" approach. This means that a sequence of actions are executed at the same time in both the television and the video cassette recorder, provided both are fitted with the EasyLink function and connected with the eurocable supplied with your video recorder.

Preparation

❶ **Wall mounting instructions**
For the wall mounting instructions follow the illustrated steps xx to xx printed on the separate template.
Make sure that the wall mount is being fixed securely enough so that it meets safety standards. The weight of the TV (excl. packaging) is about 17 kg.
How to mount the supplied stand, see the separate leaflet.
Note: other (not supplied) stands are optional accessories. Consult your dealer.

❷ Place or hang the TV wherever you want, but make sure that air can circulate freely through the ventilation slots. Do not install the TV in a confined space such as a book case or a simular unit.



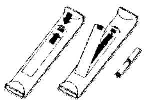
To prevent any unsafe situations, no naked flame sources, such as lighted candles, should be placed on or in the vicinity. Avoid heat, direct sunlight and exposure to rain or water. The equipment shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on it.

❸ Insert the aerial plug firmly into the aerial socket ⫪ at the bottom of the TV. For best picture quality use the suppressor-aerial cable supplied.

❹ To connect your computer, see p. 20.
To connect other peripherals, see p. 17.
If you dispose of a Cinema Link combination (Cinema Link Audio receiver and/or Cinema Link video recorder and/or DVD player), see the separate supplied instruction manual.
In order to obtain the best result, please use only the supplied antenna cables between the TV and videorecorder, and between videorecorder and antenna connector.

❺ Insert the mains cord supplied into the mains at the bottom of the TV and in the wall socket having a mains voltage of 220-240V.
To prevent damaging the power (AC) cord which could cause a fire or electric shock, do not place the TV on the cord.

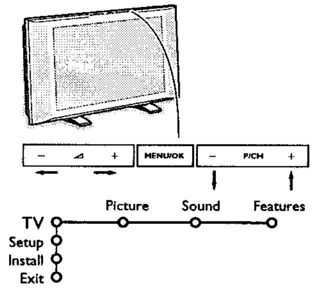
❻ **Remote control**: Insert the 2 batteries supplied (Type R6-1,5V).



The batteries supplied do not contain the heavy metals mercury and cadmium. Please check on how to dispose of exhausted batteries according to local regulations.

❼ **Switch the TV on** : Press the power switch ⏻ at the right side of the TV.
An indicator on the front of the TV lights up and the screen comes on. If the TV is in standby mode, press the **-P+** keys or the ⏻ key on the remote control.

Keys on top of the TV



Should your remote be lost or broken you can still change some of the basic settings with the keys on top of your TV.

Press:
- the ⊿ - or + key to adjust the volume;
- the **-P/CH+** keys to select the TV channels or sources.

The **MENU/OK** key can be used to summon the main menu without the remote control.

Use:
- the ⊿ - and + keys and the **P/CH-** and **P/CH+** keys to select menu items in the directions as shown;
- the **MENU/OK** key to confirm your selection.

Note:
*When activated via the **MENU/OK** key on top of the TV, only **Exit** lets you dismiss the menu.*
*Navigate to **Exit** and press the **MENU/OK** key.*

Use of the remote control RC4301

*Note: For most keys pressing a key once will activate the function. Pressing a second time will de-activate it. When a key enables multiple options, a small list will be shown. Press repeatedly to select the next item in the list. The list will be removed automatically after 4 seconds or press **OK** to remove immediately.*

Remark: in VGA mode only some keys are valid.

VCR DVD SAT AMP CD

See 'Audio- and Video equipment keys', p. 21.

Select your computer or other peripherals

See p. 18.

● ◀◀ ■ ▶ ▶▶

Audio and Video equipment keys, see p. 21.

● **Instant record**

See Record with your recorder with EasyLink, p. 21.

Time display

The time is displayed on the screen.

Surround mode

Incredible surround

With stereo transmission, and when Incredible surround is selected, it seems as though the loudspeakers are spread further apart from one another.

Virtual Dolby surround

Optimal with Dolby surround signals. Enables you to experience the effect of Dolby surround Pro Logic, reproducing a rear sound effect. See Sound menu, 3D effect, p. 11.
Note: You can make the same selection in the Sound menu, surround mode, p. 11.

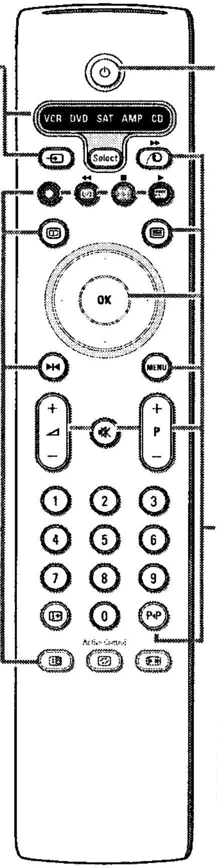
Cinema Go

See separate Cinema Link booklet supplied.

NEXTVIEW On/Off see p. 13

▶◀ **Freeze**

To freeze the picture. Dependent on the input signal, the function may not be possible.



Standby

Press to switch the TV on or off. When switched off, a red indicator on the TV lights up. When acquiring NEXTVIEW, see p. 14, an orange indicator lights up and after a period of max. 1 hour the TV is switched to full standby and the red indicator lights up.

Pixel Plus demo on/off

In the right part Pixel Plus and Digital Natural Motion are switched on.

Teletext On/Off see p. 15

OK Press this key
- to activate your choice, when in the menus.
- to display the programme list.

MENU **Main menu** on/off see p. 5

◿ To adjust the volume.

Interrupt the sound or restore it.

P **Programme selection**

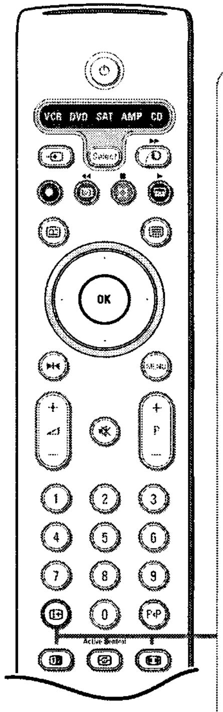
To browse through the TV channels and sources stored in the favourite list.

0/9 **Digit keys**

To select a TV channel. For a two digit programme number, enter the second digit before the dash disappears. To switch immediately to a selected one digit TV channel, keep the digit key pressed a bit longer.

P◂P **Previous TV channel**

Press to display the previously selected TV channel.



On Screen information

Press to display (when available) information about the selected TV channel and programme.

Menu/Remote control info

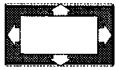
When a menu is on screen, press i+ to display info on the selected menu item. While the menu info is displayed, press any key to display remote control info. The normal function of the key is not executed.

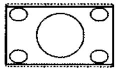
no function

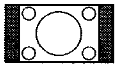
Active control see p. 11.

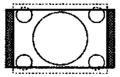
Picture format

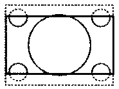
Press this key repeatedly or press the cursor up/down to select another picture format: Auto format, Super zoom, 4:3, Movie Expand 14:9, Movie Expand 16:9, Subtitle zoom, Wide screen or 16:9.

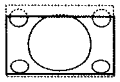

Auto format

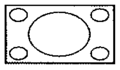

Super zoom

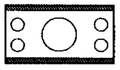

4:3


Movie Expand 14:9


Movie Expand 16:9


Subtitle zoom


Wide screen


16:9

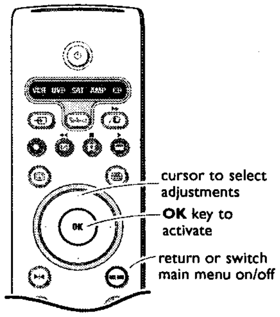
Auto format makes the picture fill the screen as much as possible. In case of subtitles in the bottom black bar, Auto format makes the subtitles visible. In case of a broadcaster logo in the corner of the top black bar, the logo disappears from the screen.

Super zoom removes the black bars on the sides of 4:3 programs with minimal distortion.

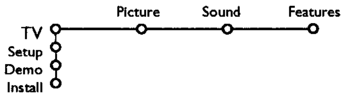
When in Movie Expand 14:9, Movie Expand 16:9, Super zoom or Subtitle zoom picture format, you can make subtitles visible with the cursor up/down.

*Note: With signals via **EXT5** or the **VGA IN** connector less picture formats are selectable.*

To use the menus


VCR DVD SAT AMP CD
OK
cursor to select adjustments
OK key to activate
return or switch main menu on/off

❶ Press the **MENU** key on the remote control to summon the main menu. At any moment you can exit the menu by pressing the **MENU** key again.
Note: If you have connected equipment with Cinema Link, more menu items are present.


Picture
Sound
Features
TV
Setup
Demo
Install

❷ Use the cursor in the up/down direction to select the **TV**, **Setup, Demo** or **Install** menu.
Use the cursor left/right to select **Picture**, **Sound** or **Features**.
Note: Sometimes not all the menu items are visible on the screen (indicated by a cluster of blue balls). Use the cursor down or right to reveal all items.

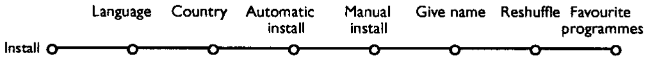
❸ Use the cursor in the left/right direction to select the menu item.

❹ Use the cursor up/down again to select the control you want to select or to adjust.

Note: Items temporary not available or not relevant are displayed in a light grey colour and cannot be selected.

Installation

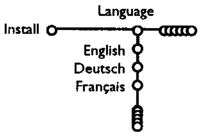
The installation menu contains the following items:

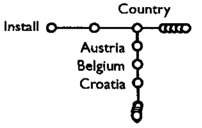

Language
Country
Automatic install
Manual install
Give name
Reshuffle
Favourite programmes
Install

EasyLink

If your video recorder has an EasyLink function, during installation, the language, country and available channels are automatically transmitted to the video recorder.

Select the menu language and country


Language
Install
English
Deutsch
Français


Country
Install
Austria
Belgium
Croatia

❶ Press the **MENU** key on the remote control.

❷ Use the cursor down to select **Install**.

❸ Use the cursor right to select **Language**.
Follow the instructions on screen.

❹ Use the cursor up/down to select your preferred language and press the **OK** key to confirm your selection.

❺ Use the cursor right to select **Country**.

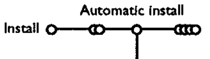
❻ Select the country where you are now located and press the **OK** key.
Select **Other** when none of the countries applies.

❼ Proceed with the **Install** menu.

Store TV channels

After language and country are set correctly, you can now search for and store the TV channels in two different ways: using Automatic Installation or Manual Installation (tuning-in channel by channel).
Select your choice with the cursor right.

Automatic installation


Automatic install
Install
Install
Start

❶ Select **Automatic install** in the Install menu.
Note: All channels must be unlocked in order to autoprogram. If requested, enter your code to unlock all channels. (See TV, Features menu, Childlock, p. 12.)

❷ Press the cursor down.
The autoprogramming option label **Start** appears.

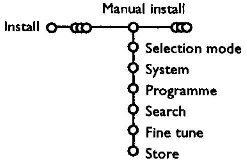
❸ Press the cursor right.

❹ The message **Searching** appears and the progress of autoprogramming is displayed.

If a cable system or a TV channel which broadcasts ACI (Automatic Channel Installation) is detected, a programme list appears. Without ACI broadcast, the channels are numbered according your language and country selection. You can use Reshuffle to renumber them. See p. 7.

It is possible that the cable company or the TV channel displays a broadcast selection menu. Layout and items are defined by the cable company or the TV channel. Make your choice with the cursor and press the ***OK*** *key.*

Manual installation


Manual install
Install
Selection mode
System
Programme
Search
Fine tune
Store

Searching for and storing TV channels is done channel by channel. You must go through every step of the Manual Installation menu.

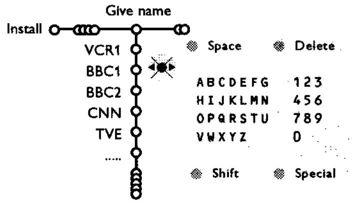
❶ Select **Manual install** in the Install menu.

❷ Press the cursor down.
Follow the instructions on screen.

*Note: Search or direct selection of a TV channel.
If you know the frequency, the C- or S-channel number, enter the 3 or 2 digits of the frequency or the channel number directly with the digit keys 0 to 9 (e.g. 048). Press the cursor down to proceed.*

Repeat to search for another TV channel.

Give name



It is possible to change the name stored in the memory or to assign a name to a TV channel or external for which a name has not yet been entered. A name with up to 5 letters or numbers can be given to the programme numbers 0 to 99.

Note : It is not possible to rename the VGA source.

❶ Select **Give Name** in the Install menu and press the cursor down.

❷ Select the programme number.
Note: keep the cursor up/down pressed to scroll through the programme list quickly.

❸ Press the cursor right.
A keyboard appears on the screen.
Press the cursor right to enter the keyboard.
Press the cursor up/down, left/right to select the first character and press **OK**. Repeat for every character you want to enter.
Select **Space** to enter a space; **Delete** to erase the highlighted character in the name entered; **Shift** to display upper- or lowercase characters on the keyboard; **Special** to display special characters on the keyboard. Press **OK** to confirm.

❹ Press the cursor left repeatedly when you have finished the name giving.

❺ Select another programme number and repeat steps ❸ to ❹.

Reshuffle the programme list

You can change the order of the stored TV channels.

❶ Select **Reshuffle** in the Installation menu.

❷ Follow the instructions on screen.

Select Favourite TV channels

A VGA source always belongs to the list of **Favourite programmes.**

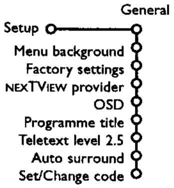
❶ Select **Favourite programmes** in the Install menu.

❷ Select your programme number with the cursor up/down.

❸ Select **Yes** or **No** with the cursor right.

❹ Repeat ❷ and ❸ for every TV channel or external you want to make a favourite or a non-favourite TV channel or external.

TV Setup



The Setup menu contains items that control the settings of the TV's functions, features, services and peripherals you may have connected.

The **General** menu allows you to change settings that will typically be accessed only occasionally.
The **Source** menu allows you to select a source.
The **Decoder** menu allows you to define one or more programme numbers as decoder programme numbers.

General

This menu allows you to change various settings that are presumably adjusted less frequently than most other settings.

Press the [i+] key on the remote control to get information about the selected menu item.

Menu background

Select **Yes** or **No** to turn the menu background on or off.

Factory settings

This resets the picture and sound settings to their predefined factory values, but maintains the channel installation settings.

NEXTVIEW provider

Select a TV broadcaster that provides NEXTVIEW data. How to make use of NEXTVIEW, see p. 13.

OSD (On Screen Display)

❶ Select **OSD.**

❷ Select **Normal** to activate extended channel and programme information. **Minimum** will display reduced channel information.
Note: When subtitles is switched on, see Features, p.12, display of the programme number is not possible

Programme title

Select **Programme title Yes** or **No.**
When selected **Yes,** after the selection of a TV programme or after pressing the [i+] key on the remote control, a TV channel which broadcasts teletext may transmit the name of the TV channel or the programme title.
When selected **No,** the programme title will only appear after pressing the [i+] key, and not after the selection of a TV channel.

Teletext level 2.5

Some broadcasters offer the opportunity to see more colours, other background colours and nicer pictures in the teletext pages.

❶ Select **Teletext level 2.5.**

❷ Press the cursor right to select **Teletext level 2.5 On** to take advantage of this feature.

❸ Press the cursor right again to select **Teletext level 2.5 Off** if you like the more neutral teletext layout.
The selection made is valid for all channels which broadcast teletext level 2.5.
Note: It may take a few seconds before teletext broadcast switches over to Teletext level 2.5.

Auto Surround

Sometimes the broadcaster transmits special signals for Surround Sound encoded programmes.
The TV automatically switches to the best surround sound mode when **Auto Surround** is switched **On.**

Set/Change code

The Child lock feature (see TV, Features, p. 12) allows you to lock channels to prevent others from watching certain programmes. To watch locked channels, a 4-digit code must be entered. The Set/Change code menu item allows you to create or change a Personal Identification Number (PIN).

❶ Select **Set/Change code.**

❷ If no code exists yet, the menu item is set to **Set code.**
If a code has previously been entered, the menu item is set to **Change code.** Follow the instructions on screen.

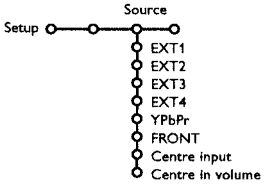
Important: You have forgotten your code !

❶ Select **Change code** in the General menu and press **OK.**

❷ Press the cursor right and enter the overriding code 8-8-8-8.

❸ Press the cursor again and enter a new personal 4-digit code. The previous code is erased and the new code is stored.

Source



This menu allows you to indicate the peripheral you connected to one of the external inputs.

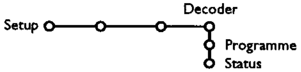
1. Press the cursor right to enter the list of types of peripherals attached to the selected input.
2. Select the peripheral device with the cursor up/down.

Once you have selected the source type, e.g. DVD, this source will automatically be selected when your remote control is in DVD mode, see p. 3, and when you press the ⊕ key on the remote control.

Centre input - Centre in volume

When you have connected a surround receiver to the TV, see p. 18, the loudspeakers of the TV can act as centre speaker, making a separate centre speaker unnecessary.
Select **Centre input On** or **Cinema Link** (in case you have connected a Cinema Link Surround receiver).
When having selected **On** you can adjust the Centre in volume with the cursor left/right to correct volume level differences of the external audio receiver and speakers.
Note: This is not the case with a Cinema Link surround receiver.

Decoder

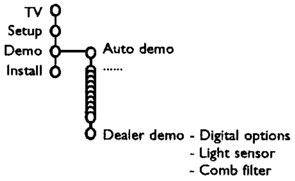


If a decoder or a descrambler is connected, see p. 17, you can define one or more programme numbers as decoder programme numbers.

1. Select **Decoder** with the cursor right.
2. Select **Programme**.
3. Select the programme number under which you have stored the programme coming from your decoder.
4. Select **Status**.
   - Select the input used to connect your decoder: **None**, **EXT1** or **EXT2**.
   - Select **None** if you do not want the selected programme number being activated as a decoder programme number.

*Note: Select **EXT2** when the decoder is connected to your EasyLink video recorder.*

Demo



The Demo menu allows to demonstrate the TV features separately or in a continuous loop.

If **Auto demo** has been selected the demo will automatically present the features sequentially in a loop. Press one of the cursor keys to stop the Auto demo.
If one of the features has been selected, this particular feature demo will run only once, and the Demo menu will reappear.

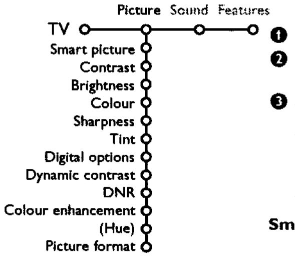
Note: The Dealer demo is not part of the automatic sequence and can only be activated separately.

TV menu

Press the **MENU** key on the remote control to summon the main menu.
Note: Dependent on the input signal, one or more menu items may not be selectable.

Press the ⊞ key on the remote control to get information about the selected menu item.

Picture menu



1. Press the cursor right to select **Picture**.
2. Select the menu items in the Picture menu with the cursor up/down.
3. Adjust the settings with the cursor left/right or enter the list of submenu items with the cursor right. Select a submenu item with the cursor up/down.

Note: To remove the menu background before adjusting the picture settings, see Select TV setup, General, p. 8.

Smart picture

Select **Smart picture** to display a list of predefined picture settings, each corresponding with specific factory settings. **Personal** refers to the personal preference settings of picture in the picture menu.

Digital options

Pixel Plus is the most ideal setting, doubles the horizontal resolution and increases the number of lines with 33%.
You may consider to select Movie Plus in case a halo effect should disturb you. Dependent on your own preference, select Progressive scan.

Dynamic contrast

Sets the level at which the TV automatically enhances the details in dark, middle and light areas of the picture.

DNR

This sets the level at which noise is measured and reduced in the picture.

Colour enhancement

This makes the colours more vivid and improves the resolution of details in bright colours.

Hue

This compensates for the colour variations in NTSC encoded transmissions.

Picture format

This will adjust the size of the picture dependent on the broadcast format and your preferred setting.

Active Control

The TV continuously measures and corrects all incoming signals in order to provide the best picture possible.

❶ Press the ▣ key on the remote control.

❷ The Active Control menu appears.

❸ Press the cursor up/down to select the Active Control values **Off**, **Minimum**, **Medium** (recommended) or **Maximum**.
The picture settings are being optimised continuously and automatically which is displayed by bars. The menu items can not be selected.

❹ Press the cursor right to select **Smart Picture**.

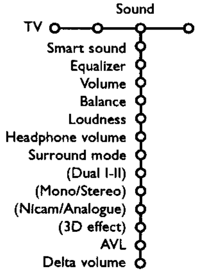
❺ Press the cursor up/down to select one of the predefined picture settings.

❻ Press the cursor right to select **Active Display**.

❼ Press the cursor up/down to select **Show bars**, one of the Dual screen demos or **Off**.
When you select Dynamic contrast, Pixel Plus, Digital Noise Reduction or Digital Natural Motion, the TV screen is divided into two parts: in the left part the selected picture quality setting is switched off; in the right part it is switched on.
Note: Dependent on the input signal, one or more Dual screen demos may not be selectable.

❽ Press the ▣ key again to switch off the Active Control menu.

Sound



❶ Press the cursor right to select **Sound**.

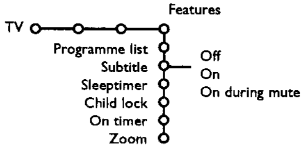
❷ Select the menu items in the Sound menu with the cursor up/down and adjust the settings with the cursor left/right. Remember, control settings are at normal mid-range levels when the bar scale is centred.

Smart sound

Select Smart sound to display a list of predefined sound settings, each corresponding with specific factory settings of Treble and Bass. **Personal** refers to the personal preference settings of sound in the sound menu.

Notes:
- *Some menu items are only available in case of a Cinema Link configuration and when the Cinema Link is activated. Others are steered by the audio receiver instead of by the TV. See the separate Cinema Link booklet supplied.*
- *Dual I-II is only available with dual sound transmission.*
- *Mono/Stereo is only selectable in case of analogue stereo transmission.*
- *Nicam/Analogue is only selectable in case of Nicam transmission.*

Features menu



❶ Press the cursor right to select **Features**.

❷ Select the menu items with the cursor up/down and adjust the settings with the cursor left/right.

Use the on-screen Menu-Info ⓘ for more information about the menu items.

Programme list

Press the **OK** key to switch over to the selected TV channel or external.

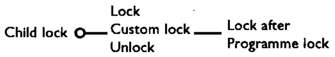
Select subtitles

The subtitle page must be stored for each TV channel:
Switch on teletext and select the proper subtitle page from the index. Switch off teletext.
Subtitle On will automatically display them on the selected TV channels if subtitles are in the transmission. A symbol will indicate that the mode is on.
Select **On during mute** when you want to have the subtitles automatically displayed only when the sound has been muted with the 🔇 key on the remote control.

Child lock

Note: A VGA source can not be locked.

❶ Select **Child lock**.



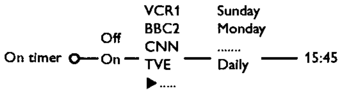
❷ Press the cursor right to enter the Child lock menu. You're summoned to enter your code.
Note: You have to re-enter your code each time you enter the child lock menu.

Important: You have forgotten your code ! See p. 8.

❸ Select one of the menu items of the child lock menu:
- **Lock** if you want to lock all channels and externals.
- **Custom lock** and press the cursor right.
Select:
  - **Lock after** if you want to lock all programmes from a certain time onwards.
Press the cursor right and enter the time with the cursor up/down and right. Press the **OK** key to validate.
  - **Programme lock** if you want to lock a certain TV channel or external;
- Select **Unlock** to disable all locks you have set.

On timer

❶ Select **On timer** with the cursor down.



❷ Select **On** with the cursor right.

❸ Press the cursor right again to enter the programme list.

❹ Select the TV channel or external you want your TV to switch to on a selected time and day.

❺ Press the cursor right again to select a day of the week or to select **Daily**.

❻ Press the cursor right once again to enter the time with the digit keys or with the cursor up/down and press the **OK** key to activate.

❼ Press the **MENU** key to turn off the menu.
Note: To check your timer settings, press the ⓘ key.

Zoom

Note: Dependent on the input signal, Zoom may not be selectable.

❶ Select **Zoom** with the cursor down and press the ok key.

❷ Press the **OK** key to select one of the zoom magnifications (x1, x4, x9, x16).

❸ Additionally you can shift the selected zoom window over the screen with the cursor keys up/down, left/right.

❹ Press the **MENU** key to turn off the zoom function.

NEXTVIEW / Teletext guide

NEXTVIEW is an electronic guide that allows you to look up programmes as you would in a newspaper or a TV magazine. You can sort the programmes by subject (films, sport...), obtain detailed information and programme your video recorder if it comes with the NEXTVIEWLink function.

Important note: ***The NEXTVIEW service is only available on certain programmes and in certain countries.*** *When no NEXTVIEW information is broadcast, the teletext programme guide appears in its place. This is based on teletext programme information (if available) and offers most functions of NEXTVIEW.*
Note: The broadcaster is responsible for the content of the information.

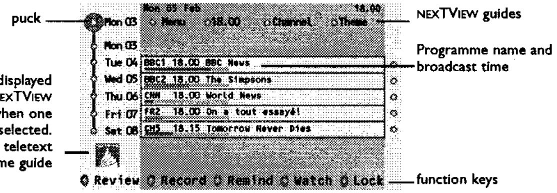
Call NEXTVIEW / Teletext guide

Press the ▤ key on the remote control to call the NEXTVIEW/Teletext guide. A menu appears with the message **One moment please.** After a while you obtain:

- a NEXTVIEW page, if the selected channel broadcasts this service (the NEXTVIEW logo is displayed),
- a teletext page, if the selected channel does not broadcast NEXTVIEW,
- **No information available** is displayed if neither NEXTVIEW nor teletext are transmitted. In this case, select another channel.

Display of a NEXTVIEW page

The information is set by the channel that transmits the NEXTVIEW service. See also Setup menu, General, NEXTVIEW provider, p. 8.


puck
Mon 03 Feb 18.00
Mon 03 ○Menu ○18.00 ○Channel ○Theme
NEXTVIEW guides
Mon 03
Tue 04
Wed 05
Thu 06
Fri 07
Sat 08
Programme name and broadcast time
This logo is only displayed during a NEXTVIEW transmission or when one of the externals is selected. No logo indicates a teletext programme guide
○Review ○Record ○Remind ○Watch ○Lock
function keys

BBC1 18.00 BBC News
BBC2 18.00 The Simpsons
CNN 18.00 World News
FR2 18.00 On a tout essayé!
CH5 18.15 Tomorrow Never Dies

NEXTVIEW guides

❶ Use the cursor key left/right to select **Time**, **Channel**, **Theme**, the **Date** guide.
The **Time guide** provides an overview of all programme titles active in the selected time block. The **Channel guide** provides an overview of all programmes that are broadcast by a single channel during one day. With the **Date guide** you can choose a specific date. The **Theme guide** displays a list of all programmes at the selected date, that matches with the selected category.
Going through the menu guide, the TV is collecting the sorting criteria to finally display a list of programme events.

❷ Press the **OK** key to select the guide type.

❸ Move the puck down and to the right to select the programmes.
If available a summary or commentary on the programme is displayed at the bottom of the screen.

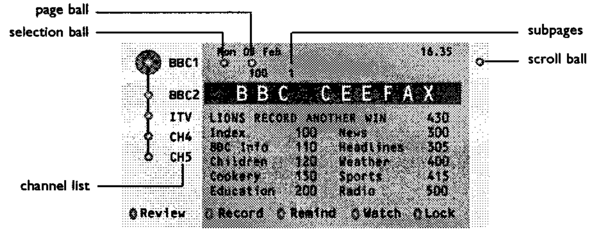
❹ Use the cursor up/down to scroll through the programmes.

Teletext Guide

❶ Enter with the digit keys, the teletext page number that contains the programme information for the current channel.

❷ Press the cursor right to move the puck over the selection ball.

❸ Use the cursor up/down to scroll through the different programmes.



LIONS RECORD ANOTHER WIN 430
Index 100 News 300
BBC Info 110 Headlines 305
Children 120 Weather 400
Cookery 150 Sports 415
Education 200 Radio 500

- If the selected programme contains a page number with an optional subcode referring to a page with more info about the programme, press the **OK** key to display the information. Press the **OK** key again to return to the programme guide page.
- If the selected programme guide page satisfies the VPT requirements,
  - it will be possible to record, remind, watch or lock programmes:
  - the TV will remember the last selected teletext page number of that channel that contains programme guide information and indicates which programme starts at what time. Every time you press the ▤ key, the teletext programme guide page of the selected TV channel will be available.
- When necessary you can select the subpage number by moving the cursor to the pageball and pressing right.

Note: You must enter the teletext pagenumber for each channel. You can change the channels also by moving the cursor up/down in the list in the left of the page.

Basic functions

Press one of the grey /⏻, red ●, green ⊙, yellow ⛶ or blue ▭ keys to activate a NEXTVIEW or Teletext Guide function. The keys appear in grey if the function is not available.

Review: this menu provides a list of programmes that are marked as reminders, those that have to be recorded and those that are locked. This menu can be used to change or remove marked programmes.

Record: to programme the recording of the video recorder (if it has a NEXTVIEWLink function and is connected to **EXT. 2**).

Remind: automatically switch on the TV if it is in standby or by displaying a message if the TV is on.

Lock: to lock certain programmes to prevent recording or watching.
For the functions Record, Remind or Lock, a small menu pops up in which you can choose the interval: once, daily or weekly, or clear an earlier made record, remind or lock setting. The default interval is set to **Once**. To confirm the frequency, press the **OK** key.

Watch: to watch the selected and currently broadcast programme.

Acquisition and updating of NEXTVIEW information

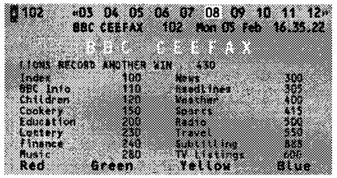
Acquisition and updating of NEXTVIEW is done when you are watching the TV channel of the selected NEXTVIEW provider, see Setup menu, p. 8, or when the TV is switched to standby;
Acquisition of fresh data will happen once during the night.
Note: it may be necessary to put the TV in standby mode when all NEXTVIEW information is outdated, e.g. when returning from holiday.

Teletext

Most TV channels broadcast information via teletext. This TV has a 1200 pages memory that will store most broadcasted pages and subpages to reduce waiting time. After each programme change, the memory is refreshed.

Switch Teletext on and off

Press ▤ to switch the teletext on.



Select a Teletext page

- Enter the desired page number with the digit keys, the cursor keys up/down, left/right or with the **-P+** key.
- Select the options at the bottom of the screen with the colour keys.

Previously selected teletext page

(Only possible in case there is no list of favourite teletext pages available. See p. 17.)
Press the P‹P key.

Select the index teletext page

Press the grey colour key ▶▶ to display the main index (usually p.100).

Only for T.O.P teletext broadcasts :

Press ⓘ. A T.O.P. overview of the teletext subjects available is displayed.
Select with the cursor up/down, left/right the desired subject and press the **OK** key.
Not all TV channels broadcast T.O.P. teletext.

Select subpages

When a selected teletext page consists of different subpages, a list of available subpages appears on the screen.
Press the cursor left or right to select the next or previous subpage.

Enlarge a Teletext page

Press ⊞ repeatedly to display the upper teletext part, the lower teletext part and then to return to the normal teletext page size. When the teletext page is enlarged, you can scroll the text, line by line using the cursor up/down.

Hypertext

With hypertext you can quickly jump to a pagenumber or search for a specific word shown on the current teletext page.

❶ Press the **OK** key to highlight the first word or a number on the page.
❷ Use the cursor up/down, left/right to select any other word or number you want to search for.
❸ Press the **OK** key to confirm. The search starts. A message appears at the bottom of the screen to indicate the searching, or that the word or page is not found.
❹ Use the cursor up to exit hypertext.

Teletext menu

❶ Press the **MENU** key to activate the menu.
❷ Press the cursor up/down to select the menu items.
❸ Press the cursor right to activate.

Reveal

Reveals/conceals hidden information on a page, such as solutions to riddles and puzzles.
Press the cursor right to activate.

Favourite

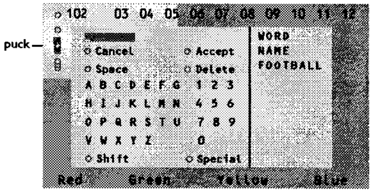
This list contains up to eight favourite teletext pages. Only the pages of the current channel can be selected.

❶ Press the cursor right to enter the list.
❷ Press the cursor right again to add the current page or to select one of the favourite pages to the list.
❸ Press the **MENU** key to watch the page.
❹ Use the P‹P key to browse through the list of favourite pages.

Search

Selecting a word

On the keyboard on screen you can type in a random word you want to search for in the teletext pages. Whether upper- or lowercase is used has no influence.



❶ Press the cursor right to enter the keyboard.
❷ Press the cursor left/right, up/down to select the characters, words or functions.
❸ Press the **OK** key to confirm each character selected.
❹ Select **Cancel** to cancel the word; **Space** to enter a space; **Delete** to delete the last character selected; **Shift** to switch between lowercase or capital characters; **Special** to display special characters on the keyboard and press the **OK** key.
❺ Press the cursor left repeatedly to return to the Teletext menu again.

Searching a word

❶ Type in the word on screen or select a word from the history list on the right and press **OK**.
❷ Select **Accept** and press **OK** again. The message Searching appears.
❸ To cancel the searching or to search for a new word, select **Keyboard** and press **OK**.
❹ When a word is not found, a message appears. When the word is found, it is highlighted in the teletext page. To continue the search, press the **OK** key.

Cycle subpages *(if available)*

Makes the subpages cycle automatically.
Press the cursor right to activate and to de-activate again.

Timed page

To display a specific page from a selected TV channel at a certain time.

❶ Press the cursor right and select **Yes** or **No**.
❷ Enter the time and pagenumber with the cursor keys or the digit keys.
Notes:
- *Teletext does not have to remain switched on, but you should watch the TV channel you have selected the specific page from.*
- *It is not possible to display a timed page when in VGA mode.*

❸ Press the cursor left to return to the TV menu again.

Language

If the displayed characters on screen do not correspond with the characters used by the teletext broadcaster, you can change the language group here.
Select **Group 1** or **Group 2** with the cursor right.

Press the **MENU** key to leave the Teletext menu.

Connect Peripheral Equipment

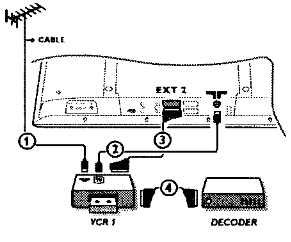
There is a wide range of audio and video equipment that can be connected to your TV.
The following connection diagrams show you how to connect them.

Note: ***EXT1*** *can handle CVBS and RGB;* ***EXT2*** *CVBS, Y/C and RGB;* ***EXT3*** *and* ***4*** *CVBS;* ***EXT5*** *Y-Pb-Br 480p, 576p, 1080i;* ***VGA IN*** *can hancle VGA, SVGA, XGA and 480p, 576p, 1080i.*
It is preferred to connect peripherals with RGB output to ***EXT1*** *or* ***EXT2*** *as RGB provides a better picture quality.*

Note: If your recorder is provided with the EasyLink function, it should be connected to ***EXT2*** *to benefit from the EasyLink functionality.*

Recorder (VCR-DVD+RW)

Note: Do not place your recorder too close to the screen as some recorders may be susceptible for signals out of the display. Keep a minimum distance of 0,5 m to the screen.

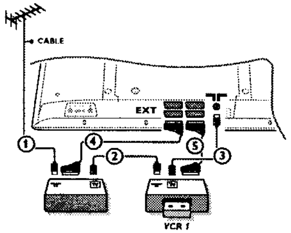


Connect the aerial cables ①, ② and, to obtain the optimum picture quality, eurocable ③ as shown.
If your recorder does not have a euroconnector, the only possible connection is via the aerial cable. You will therefore need to tune in your recorder's test signal and assign it programme number 0 or store the test signal under a programme number between 90 and 99, see Manual installation, p. 6.
See the handbook of your recorder.

Decoder and Recorder

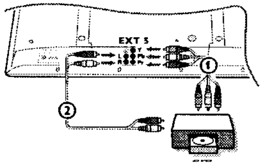
Connect a eurocable ④ to your decoder and to the special euroconnector of your recorder. See also the recorder handbook. See Decoder, p. 9. You can also connect your decoder directly to **EXT1** or **2** with a eurocable.

Other equipment (satellite receiver, decoder, DVD, games, etc.)



1. Connect the aerial cables ①, ② and ③ as shown (only if your peripheral has TV aerial in-/output).
Connect your equipment with a eurocable ④ or ⑤ to one of the euroconnectors **EXT1**, **2**, **3** or **4** to obtain a better picture quality.
2. Look for the test signal of your peripheral in the same way as you do for a recorder.
3. Make a selection in the Setup, Source menu, p. 9.

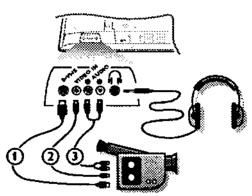
DVD player



With Component Video Output Connectors (EXT5/YPbPr)

1. Connect the three separate component video cables to the DVD player's **Y**, **U** (Pb) and **V** (Pr) jacks and to the Y, Pb and Pr jacks on the TV.
2. Connect the audio cable to the DVD player's **AUDIO L** and **R** jacks and to the **L** and **R** audio **EXT5** jacks on the TV.

Front connections



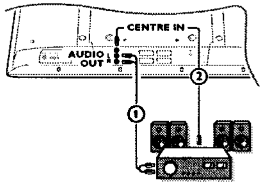
Camera or Camcorder

1. Connect your camera or camcorder as shown.
2. Connect to **VIDEO** ② and **AUDIO L** ③ for mono equipment. For stereo equipment also connect **AUDIO R** ③. S-VHS quality with an S-VHS camcorder is obtained by connecting the S-VHS cables with the **S-VIDEO** input ① and audio inputs ③.
Do not connect cable ① and ② at the same time. This may cause picture distortion !

Headphone

1. Insert the plug into the headphone socket 🎧 as shown.
2. Press 🔇 on the remote control to switch off the internal loudspeakers of the TV.
The headphone impedance must be between 8 and 4000 Ohm. The headphone socket has a 3.5 mm jack.
In the Sound menu select **Headphone volume** to adjust the headphone volume.

Multi channel Surround receiver



1. Connect the audio cable to the multi channel Surround receiver and to **AUDIO OUT L** and **R** at the bottom of your TV ①.
2. If you want the loudspeakers of your TV to act as centre speaker, also connect an audiocable to the multi channel Surround receiver and to the **CENTRE IN** at the bottom of your TV ②.
3. Select **Centre Input On** in the Source menu. See p. 9.

The loudspeakers of the TV will now only produce centre sound, the loudspeakers connected to the audio receiver will produce Surround Sound. The volume has to be controlled via the multi channel Surround receiver.

Note: No sound will be heard when a TV channel or external source is blocked via the Child lock menu (see p. 12).

To select connected equipment

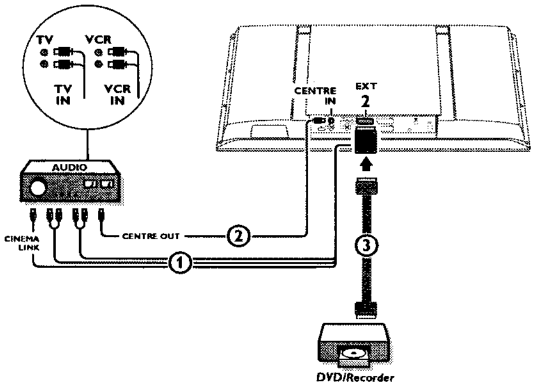
Press the ⊕ key on the remote control repeatedly, or select Source in the Setup menu (see p. 9) to select **EXT1**, **EXT2**, **EXT3**, **EXT4**, **YPbPr**, **FRONT** or **VGA** according to where you connected your equipment.

Remark : Most equipment (decoder, recorder) carries out the switching itself, when it is switched on.

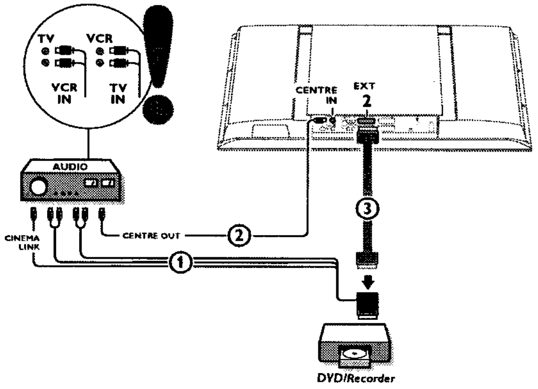
Cinema Link surround receiver

See the separate supplied Cinema Link instruction manual.

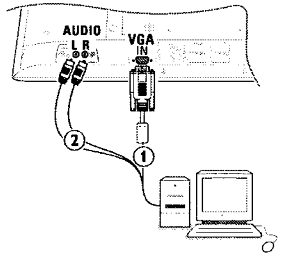
Attention: the sound info on screen will not correspond with the actual sound reproduction.


TV
VCR
TV IN
VCR IN
AUDIO
CINEMA LINK
CENTRE OUT
②
①
CENTRE IN
EXT 2
③
DVD/Recorder

OR


TV
VCR
VCR IN
TV IN
AUDIO
CINEMA LINK
CENTRE OUT
②
①
CENTRE IN
EXT 2
③
DVD/Recorder

Connect your computer


AUDIO
L R
VGA
IN
②
①

❶ Connect one end of a VGA cable ① to the video card of the computer and the other end to the **VGA** connector at the bottom of the TV.
Fix the connectors firmly with the screws on the plug.

❷ In case of a Multimedia computer, connect the audio cable ② to the audio outputs of your Multimedia computer and to the **AUDIO R** (right) and **L left)** inputs of the side panel.

The **VGA IN** connector allows the following TV and monitor display modes:

EDTV	640/720 x 480p	
	720 x 576p	
HDTV	1920 x1080i	
VGA	640 x 480	60 Hz
SVGA	800 x 600	56 Hz
XGA	1024 x 768	60 Hz

Note:
If possible, use the XGA1024x768@60Hz video mode to obtain the best image quality for your LCD monitor.

Recorder or DVD with EasyLink

The recorder (VCR or DVD+RW) or DVD can be operated with the remote control via the **Recorder** or **DVD** menu on screen.

Recorder	◀◀	◀	■	▶	▶▶	●	▲
	Rwd	Play	Stop	Play	Ffw	Rec	Eject

DVD	◀◀	◀	■	▶	▶▶	▲
	Prev.	Play	Stop	Play	Next	Eject

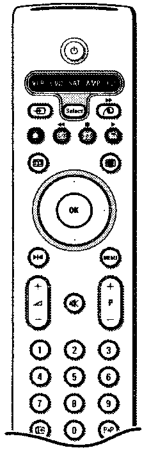
❶ Press the **MENU** key on the remote control.

❷ Select the **Recorder** or **DVD** menu with the cursor up/down.

❸ Press the cursor left/right, up/down to select one of the recorder or DVD functions.

The key ● for recording can be operated in the TV mode.
If your EasyLink recorder has the system standby function, when you press the ⏻ key for 3 seconds, both TV and the recorder are switched to standby.

Audio- and video equipment keys



This system remote control operates the following Philips equipment: TV, VCR, DVD, SAT (RC5), AMP (+TUNER), CD;

Press the **Select** key to operate any of the equipment indicated in the display. Another device can be selected by pressing Select repeatedly within 2 seconds. The led will blink slowly to indicate the device.
Press one of the keys on the remote control to operate the peripheral equipment.
To return to TV mode press Select while the led is blinking.
When no action is taken within 60 seconds, the remote goes back to TV mode.

*Note: When the **Select** key is pressed and hold for more than 2 seconds, the RC5/RC6 system select command is transmitted.*

⏻	to switch to standby
▶◀	for pause (**VCR, DVD, CD**)
●	for record
◀◀	for rewind (**VCR, CD**); search down (**DVD, AMP**)
■	for stop
▶	for play
▶▶	for fast forward (**VCR, CD**); search up (**DVD/AMP**)
⊡	to select your choice of subtitle language (**DVD**); RDS news/TA (**AMP**); to shuffle play (**CD**)
▤	to select a **DVD** title; RDS display (**AMP**); info on screen (**CD**)
i+	display information

MENU	to switch the menu on or off
- P +	for chapter, channel, track selection
0 to 9	digit entry
P◂P	tape index (**VCR**), select a DVD chapter, select a frequency (**AMP**)
⏲	VCR timer
⛶	surround on/off (**AMP, CD**)
cursor up/down	to select the next or the previous disc (**CD**)
cursor left/right	to select the previous or following track (**CD**) search up/down (**AMP**)

Additionally the DVD, SAT and CD indicator can be programmed to operate the DVD-R, SAT (RC6), CD-R instead.

❶ Press the **Select** key repeatedly until no LED is lit.

❷ To program **DVD-R**, press the **OK** key + digit 2.
To program **SAT (RC6)**, press the **OK** key + digit 4.
To program **CD-R**, press the **OK** key + digit 6.
From now on, when the corresponding (**DVD, SAT, CD**) indicator is selected, the remote control will operate your DVD-R, SAT (RC6) or CD-R.

*Note: To return to the modes programmed in the factory, either remove the batteries for a few minutes, or press the **OK** key + digit 1 (DVD mode); or + digit 3 (SAT-RC5) or + digit 5 (CD mode).*

Record with your recorder with EasyLink

In TV mode, it is possible to start a direct recording of the programme which is being displayed on the TV screen. Continue to press the ● record key on the remote control for more than 2 seconds.

Note: Switching programme numbers on your TV does not disturb recording !
*When recording a programme from a peripheral connected to **EXT 1**, **EXT 3, EXT 4, EXT 5** or **FRONT**, you can not select another TV programme on the screen.*

Attention:
Recording from EXT [illegible] will only have black and white pictures !

Tips

Care of the screen	**Do not rub or strike the screen with anything hard as this may scratch, mar, or damage the screen permanently.** **Unplug the set before cleaning the screen. dust the TV by wiping the screen and the cabinet with a soft, clean cloth. If the screen requires additional cleaning, use a clean, damp cloth; do not use liquid cleaners or aerosol cleaners.**
Poor Picture	• Have you selected the correct TV system in the manual installation menu? • Is your TV or house aerial located too close to loudspeakers, non-earthed audio equipment or neon lights, etc.? • Mountains or high buildings can cause double pictures or ghost images. Sometimes you can improve the picture quality by changing the direction of the aerial. • Is the picture or teletext unrecognisable? Check if you have entered the correct frequency. See Installation, Manual installation, p. 6. • Are brightness, sharpness and contrast out of adjustment? Select Factory settings in the Setup, General menu, p. 8.
No Picture	• Are the supplied cables connected properly ? (The aerial cable to the TV, the other aerial to your recorder, the VGA cables to the display, the power cables.) • Has the child lock been switched off ? • Is your PC switched on ? • Do you see a black screen and the indicator in front of the TV lights up green, this means that the display mode is not supported. Switch your VGA-source to a correct mode. • In case of weak or bad signal, consult your dealer.
Digital distortion	The low quality of some digital picture material may be the cause of digital image distortion. In this case select the Soft setting using the Picture menu, Smart Picture, without changing the picture settings manually.
No sound	• No sound on any channel? Check the volume isn't at minimum. • Is the sound interrupted with the mute key 🔇?
No solution found for your picture or sound problem ?	Switch your TV off and then on again once. Never attempt to repair a defective TV yourself. Check with your dealer or call a TV technician.
Menu	Have you selected the wrong menu? Press the menu key again to exit from the menu.
NEXTVIEW	**Orange indicator on front of the TV during standby / No NEXTVIEW info:** See Acquisition and updating of NEXTVIEW information, p. 14. **Displayed time is wrong:** The broadcaster on programme number one does not transmit the correct local date and time. Use Reshuffle in the installation menu to place another broadcaster on programme number one.
Remote control	• Check if the remote control is in the correct mode. • If your TV no longer responds to the remote control, the batteries may be dead. • You can still use the **MENU/OK** key and the -/+ keys on top of your TV.
Standby	Your TV consumes energy in the standby mode. Energy consumption contributes to air and water pollution. Power consumption: 2 W.
No stable or not synchronised VGA picture	Check if you have selected the correct VGA mode in your PC. See the separate instruction manual with the monitor.
Miscellaneous	. Ambient temperature: + 5~ + 35°C . Mains: 50/60 Hz Auto Voltage ranging from 198 V to 264 V . Power consumption: around 170 W . Standby consumption: 1 W . Weight (excl. packaging): 17 kg . Dimensions (wxhxd): 891x489x110

Table of TV frequencies.
Frequenztabelle der Fernsehsender.
Liste des fréquences des émetteurs.
Frequentietabel TV-Zenders.
Tabella delle frequenze delle trasmittenti.
Lista de las frecuencias de las emisoras.
Lista das frequências dos emissores.
Liste over TV senderne.
Tabell over TV-frekvenser.
Tabell över TV-frekvenser.
TV-taajuustaulukko.
Κατάλογος συχνοτήτων πομπών.
Список частот передатчиков.
A televizió–adóállomások frekvenciáinak a listája.
Lista częstotliwości stacji nadawczych.
Seznam frekvenčních pásem vysílačů.
Zoznam frekvenčných pásiem vysielačov.

EUROPE

CH	FREQ (MHz)
E2	48.25
E3	55.25
E4	62.25
E5	175.25
E6	182.25
E7	189.25
E8	196.25
E9	203.25
E10	210.25
E11	217.25
E12	224.25
S1	105.25
S2	112.25
S3	119.25
S4	126.25
S5	133.25
S6	140.25
S7	147.25
S8	154.25
S9	161.25
S10	168.25
S11	231.25
S12	238.25
S13	245.25
S14	252.25
S15	259.25
S16	266.25
S17	273.25
S18	280.25
S19	287.25
S20	294.25
H1	303.25
H2	311.25
H3	319.25
H4	327.25
H5	335.25
H6	343.25
H7	351.25
H8	359.25
H9	367.25
H10	375.25
H11	383.25
H12	391.25
H13	399.25
H14	407.25
H15	415.25
H16	423.25
H17	431.25
H18	439.25
H19	447.25
21	471.25
22	479.25
23	487.25
24	495.25
25	503.25
26	511.25
27	519.25
28	527.25
29	535.25
30	543.25
31	551.25
32	559.25
33	567.25
34	575.25
35	583.25
36	591.25
37	599.25
38	607.25
39	615.25
40	623.25
41	631.25
42	639.25
43	647.25
44	655.25
45	663.25
46	671.25
47	679.25
48	687.25
49	695.25
50	703.25
51	711.25
52	719.25
53	727.25
54	735.25
55	743.25
56	751.25
57	759.25
58	767.25
59	775.25
60	783.25
61	791.25
62	799.25
63	807.25
64	815.25
65	823.25
66	831.25
67	839.25
68	847.25
69	855.25

E-EUROPE

CAN.	FREQ (MHz)
R1	49.75
R2	59.25
R3	77.25
R4	85.25
R5	93.25
R 6	175.25
R 7	183.25
R 8	191.25
R 9	199.25
R10	207.25
R11	215.25
R12	223.25
S1	105.25
S2	112.25
S3	119.25
S4	126.25
S5	133.25
S6	140.25
S7	147.25
S8	154.25
S9	161.25
S10	168.25
S11	231.25
S12	238.25
S13	245.25
S14	252.25
S15	259.25
S16	266.25
S17	273.25
S18	280.25
S19	287.25
S20	294.25
H1	303.25
H2	311.25
H3	319.25
H4	327.25
H5	335.25
H6	343.25
H7	351.25
H8	359.25
H9	367.25
H10	375.25
H11	383.25
H12	391.25
H13	399.25
H14	407.25
H15	415.25
H16	423.25
H17	431.25
H18	439.25
H19	447.25
21	471.25
22	479.25
23	487.25
24	495.25
25	503.25
26	511.25
27	519.25
28	527.25
29	535.25
30	543.25
31	551.25
32	559.25
33	567.25
34	575.25
35	583.25
36	591.25
37	599.25
38	607.25
39	615.25
40	623.25
41	631.25
42	639.25
43	647.25
44	655.25
45	663.25
46	671.25
47	679.25
48	687.25
49	695.25
50	703.25
51	711.25
52	719.25
53	727.25
54	735.25
55	743.25
56	751.25
57	759.25
58	767.25
59	775.25
60	783.25
61	791.25
62	799.25
63	807.25
64	815.25
65	823.25
66	831.25
67	839.25
68	847.25
69	855.25

FRANCE

CAN.	FREQ (MHz)
2	55.75
3	60.50
4	63.75
5	176.0
6	184.0
7	192.0
8	200.0
9	208.0
10	216.0
B	116.75
C	128.75
D	140.75
E	159.75
F	164.75
G	176.75
H	188.75
I	200.75
J	212.75
K	224.75
L	236.75
M	248.75
N	260.75
O	272.75
P	284.75
Q	296.75
H1	303.25
H2	311.25
H3	319.25
H4	327.25
H5	335.25
H6	343.25
H7	351.25
H8	359.25
H9	367.25
H10	375.25
H11	383.25
H12	391.25
H13	399.25
H14	407.25
H15	415.25
H16	423.25
H17	431.25
H18	439.25
H19	447.25
21	471.25
22	479.25
23	487.25
24	495.25
25	503.25
26	511.25
27	519.25
28	527.25
29	535.25
30	543.25
31	551.25
32	559.25
33	567.25
34	575.25
35	583.25
36	591.25
37	599.25
38	607.25
39	615.25
40	623.25
41	631.25
42	639.25
43	647.25
44	655.25
45	663.25
46	671.25
47	679.25
48	687.25
49	695.25
50	703.25
51	711.25
52	719.25
53	727.25
54	735.25
55	743.25
56	751.25
57	759.25
58	767.25
59	775.25
60	783.25
61	791.25
62	799.25
63	807.25
64	815.25
65	823.25
66	831.25
67	839.25
68	847.25
69	855.25

ITALY

CAN.	FREQ (MHz)
A	53.75
B	62.25
C	82.25
D	175.25
E	183.75
F	192.25
G	201.25
H	210.25
H1	217.25
S1	105.25
S2	112.25
S3	119.25
S4	126.25
S5	133.25
S6	140.25
S7	147.25
S8	154.25
S9	161.25
S10	168.25
S11	231.25
S12	238.25
S13	245.25
S14	252.25
S15	259.25
S16	266.25
S17	273.25
S18	280.25
S19	287.25
S20	294.25
H1	303.25
H2	311.25
H3	319.25
H4	327.25
H5	335.25
H6	343.25
H7	351.25
H8	359.25
H9	367.25
H10	375.25
H11	383.25
H12	391.25
H13	399.25
H14	407.25
H15	415.25
H16	423.25
H17	431.25
H18	439.25
H19	447.25
21	471.25
22	479.25
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31	551.25
32	559.25
33	567.25
34	575.25
35	583.25
36	591.25
37	599.25
38	607.25
39	615.25
40	623.25
41	631.25
42	639.25
43	647.25
44	655.25
45	663.25
46	671.25
47	679.25
48	687.25
49	695.25
50	703.25
51	711.25
52	719.25
53	727.25
54	735.25
55	743.25
56	751.25
57	759.25
58	767.25
59	775.25
60	783.25
61	791.25
62	799.25
63	807.25
64	815.25
65	823.25
66	831.25
67	839.25
68	847.25
69	855.25

GB

The frequencies used by a cable company may differ from the frequencies on the table. Consult your cable company or your dealer for detailed information.

D

In Kabelfernsehanlagen können Abweichungen von den in den Frequenztabellen aufgeführten Frequenzen vorkommen. Bitte wenden Sie sich an Ihren Fachhändler oder Ihre Kabelfernsehgesellschaft, die Ihnen die zutreffenden Frequenzen mitteilt.

F

Les fréquences utilisées par une société de télédistribution peuvent être différentes de celles sur la liste des fréquences. Consultez votre société de télédistribution ou votre revendeur pour des informations plus détailées.

NL

De frequenties die gebruikt worden door een kabelmaatschappij kunnen verschillen van deze op de tabel. Raadpleeg uw kabelexploitant of uw handelaar voor meer informatie.

I

Le frequenze usate per una società di teledistribuzione possano essere differenti di quelle nella tabella. Consultate la società di teledistribuzione o il vostro rivenditore per informazione specifica.

E

Las frecuencias utilizadas por las empresas de distribución de señal por cable, pueden ser diferentes de las que se encuentran en esta tabla. Consulte con su compañia de distribución de televisión por cable o con su distribuidor para que le proporcionen una Información más detallada.

P

As frequências utilizadas por uma sociedade de teledistribuição podem ser diferentes das indicadas na lista de frequências. Consultar a sociedade de teledistribuição ou o vendedor para informações mais detalhadas.

DK

Frekvenser benyttet af kabel operatører kan være afvigende fra disse, kantakt deres kabel operatør eller forhandler for næmere informa-tion.

N

Frekvensene som benyttes pa et kabelnett kan avvike fra de som er oppført i tabellen. Kontakt ditt kabel-TV selskap eller din forhandler for næmere opplysninger.

S

Frekvenserna som används i kabel-TV-näten kan avvika från frekvenserna i tabellen. Kontakta ditt kabel-TV-bolag eller din radiohandlare för vidare information.

SF

Kaapeliyhtiöden käyttämät taajuudet voivat poiketa taulukossa olevista taajuuksista. Tarkat tiedot saat kaapeliyhtiösta tai myyjältä.

GR

Οι συχνότητες που χρησιμοποιούνται από μια εταιρεία τηλεμετάδοσης είναι δυνατόν να είναι διαφορετικές από αυτές που περιέχει ο κατάλογος. (Συμβουλευθείτε την εταιρεία τηλεμετάδοσης ή τον πωλητή για λεπτομερέστερες πληροφορίες).

CEI

Частоты на которых передаёт телакампания могут отличаться от частот на данной таблице. (Обратиться к Вашей телекампании или Вашему продавцу за дополнительной информацией.

H

Egy televizió–adóállomás sugárzáshoz használt frekvenciatartományai lehetnek a táblázatban közöltektől eltérőek is. (Abban az esetben, ha bővebb információkra van szüksége, forduljon az eladóhoz.)

PL

Operator sieci telewizyjnej może stosować inne częstotliwości, niż te, które figurują na tablicy (bardziej szczegółowych informacji na ten temat zasięgnąć u operatora lub sprzedawcy).

CZ

Frekvence používané některými televizními společnostmi se mohou lišit od údajů uvedených v tomto seznamu. Informujte se blíže u příslušné společnosti nebo v prodejně, kde jste televizor koupili.

SK

Frekvencie používané niektorými spoločnosťami televízneho prenosu sa môžu líšiť od údajov uvedených v tomto zozname. Informujte sa bližšie u príslušnej spoločnosti alebo v predajni, kde ste televízor kúpili.

Personal Notes:

4. Mechanical Instructions

Index of this chapter:

4.1 Service Positions
4.2 Assy/PWB Removal
4.3 Set Re-assembly

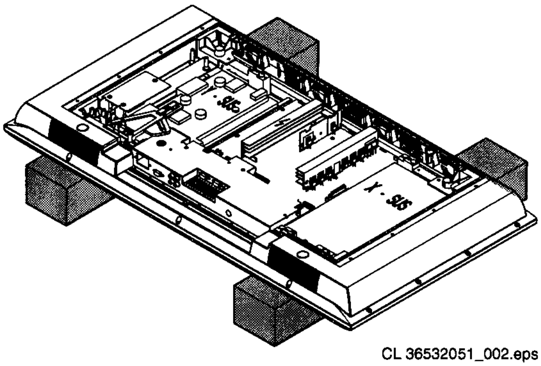
Notes:

- Figures below can deviate slightly from the actual situation, due to the different set executions.
- Follow the disassemble instructions in described order.

4.1 Service Positions

First, put the TV set in its service position. Therefore, place it upside down on a table top (use a protection sheet or a foam cushion).

4.1.1 The Foam Bars

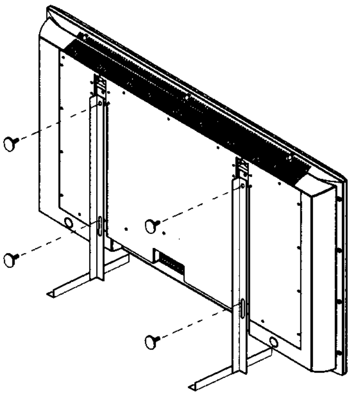


CL 36532051_002.eps
190603

Figure 4-1 Foam bars

The foam bars (order code 3122 785 90580) can be used for all types and sizes of Flat TVs. By laying the plasma or LCD TV flat on the (ESD protective) foam bars, a stable situation is created to perform measurements and alignments. By first placing a mirror flat on the table under the TV you can easily see if something is happening on the screen.
The stand is also handy to replace the screen.

4.1.2 The Aluminium Stands



CL 36532051_001.eps
040703

Figure 4-2 Aluminium stands

The aluminium stands (order code 3122 785 90480) can also be used to do measurements and alignments, also they are very suitable to perform duration tests. With this stands the set does not take much space, has no risk of over heating, and/or falling. The stands can be mounted and removed quickly and easily with use of the provided screws, which can be tightened and loosened manually without the use of tools

Caution: Only use the screws provided, otherwise it is possible to damage the monitor inside.

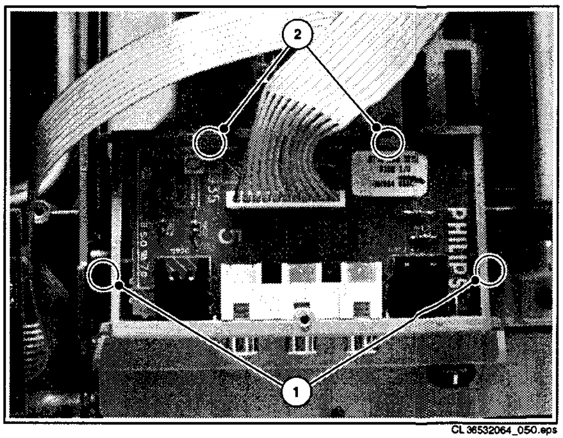
4.2 Assy/PWB Removal

4.2.1 Rear Cover

Warning: Disconnect the mains power cord before you remove the rear cover.
First, unscrew the rear cover:

1. Remove the screws that secure the rear cover. The screws are located at the top, bottom, left and right side, also there are three deeper located screws next to the stands.
2. Lift the rear cover from the cabinet. Make sure that wires and flat foils are not damaged during cover removal.

4.2.2 Side I/O Panel

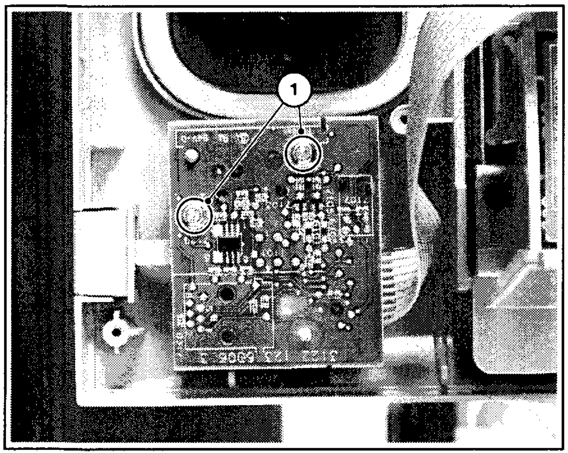


CL 36532064_050.eps
161003

Figure 4-3 Side I/O panel

1. Disconnect the cable of the panel
2. To replace the complete bracket, remove the two fixing screws (1) on either side of the panel.
3. To get the panel out, push the two brackets out and lift the panel off.
4. Remove the panel.

4.2.3 Main switch/LED panel

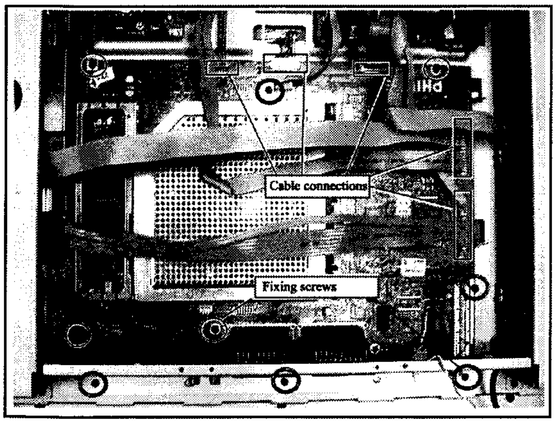


CL 36532064_051.eps
161003

Figure 4-4 Main switch/LED panel

1. Disconnect the cable on the rear of the panel.
2. Remove the two fixing screws (1) as shown on the photo.

4.2.4 Small Signal Panel

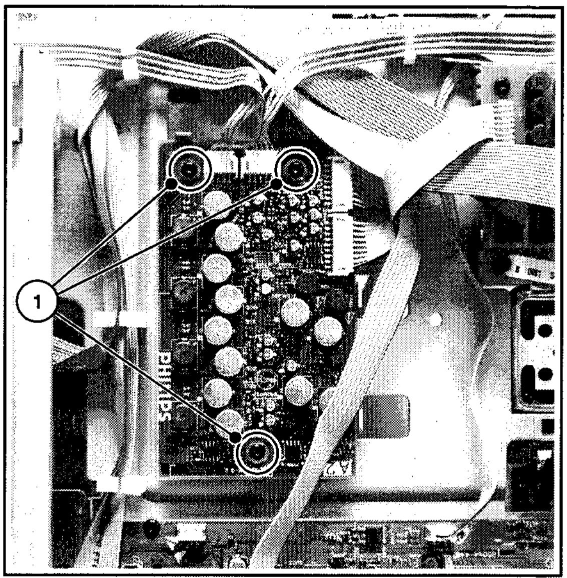


CL 36532053_091.eps
301003

Figure 4-5 Small Signal Panel

1. Disconnect all cables from the panel.
2. **Caution:** The connectors of the LVDS cable are very fragile, be careful not to damage them.
3. Remove the fixing screws of the panel.

4.2.5 Audio Amplifier

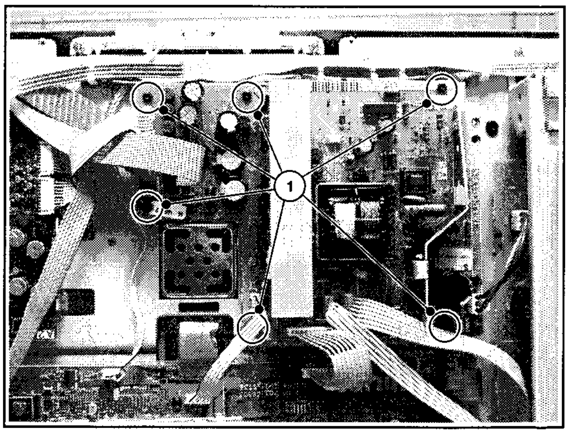


CL 36532064_053.eps
161003

Figure 4-6 Audio Amplifier

1. Disconnect all cables from the panel.
2. Remove the fixing screws (1) of the panel.

4.2.6 Auxiliary Supply

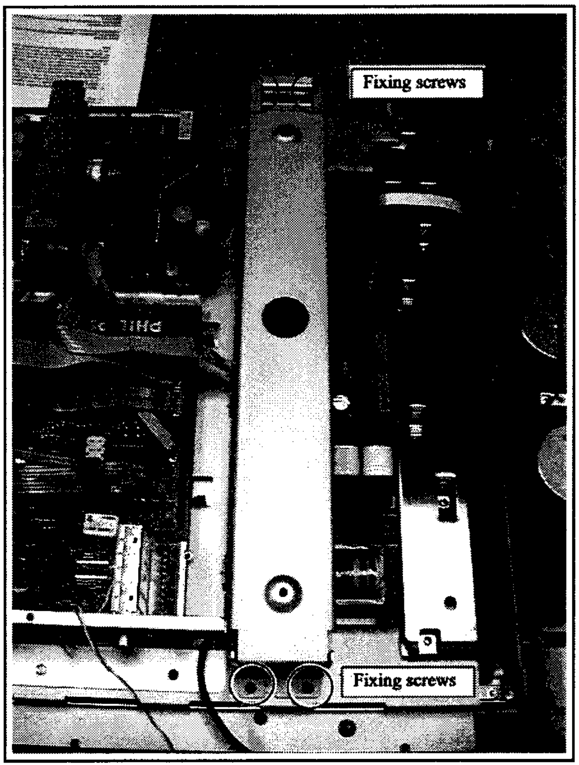


CL 36532064_054.eps
161003

Figure 4-7 Auxiliary Supply

1. Disconnect all cables from the panel.
2. Remove the fixing screws (1) of the panel.

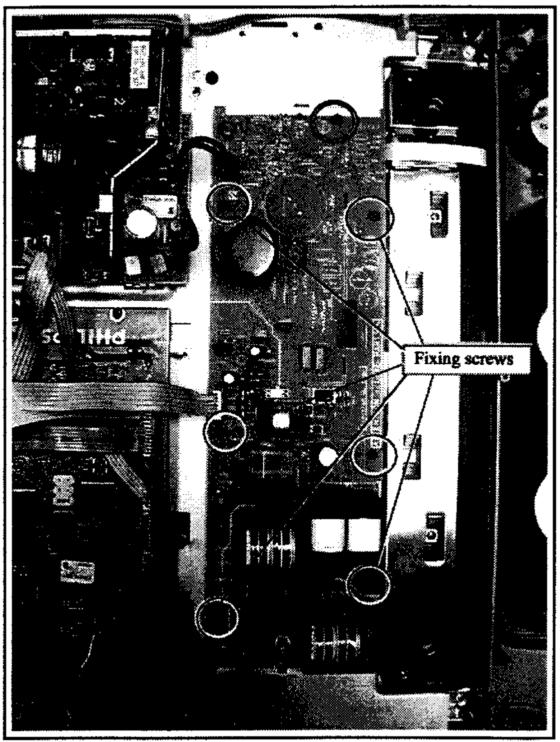
4.2.7 Main Power Supply



CL 36532053_094.eps
301003

Figure 4-8 Wall mounting bracket

1. Remove the screws on both the top and bottom of the mounting bracket.
2. Remove the bracket before accessing the Main Power Supply panel.

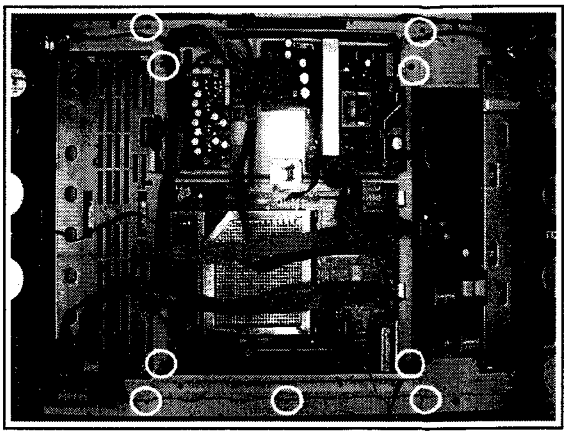


CL 36532053_095.eps
301003

Figure 4-9 Main Power Supply

1. Disconnect the cables from the panel.
2. Remove the fixing screws on each side of the panel.

4.2.8 LCD Panel



CL 36532053_096.eps
301003

Figure 4-10 LCD Display

Make sure that the power is switched "off" and that the necessary cables are disconnected.
To replace the LCD panel (including the backlight), please remove all the panels first (including the two mounting brackets), as mentioned above.

1. Remove the five fixing screws on the border of the panel with a no. 10 Torx screwdriver.
2. Remove the four fixing screws on the panel with a no. 20 Torx screwdriver.
3. Lift the LCD panel including the backlightsout of the frame.

4.3 Set Re-assembly

To re-assemble the whole set, execute all processes in reverse order.

Notes:

- As soon as you have removed the plastic back cover, you must replace the speaker-box sealing foam (12nc: 3104 303 10791). This, to ensure that the loudspeakers are airtight. Do not stretch the foam during mounting. Pay special attention to the corners, to make sure that the foam is not stretched and that it is pushed in the corners.
- While re-assembling, make sure that all cables are placed and connected in their original position

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

5.1 Test Points
5.2 Service Modes
5.3 Problems and Solving Tips (related to CSM)
5.4 ComPair
5.5 Error Codes
5.6 The Blinking LED Procedure
5.7 Protections
5.8 Repair tips
5.9 Software Downloading

5.1 Test Points

The chassis is equipped with test points printed on the circuit board assemblies.

Perform measurements under the following conditions:

- Service Default Mode.
- Video: colour bar signal.
- Audio: 3 kHz left, 1 kHz right.

5.2 Service Modes

Service Default Mode (SDM) and Service Alignment Mode (SAM) offer several features for the service technician, while the Customer Service Mode (CSM) is used for communication between a Philips Customer Care Centre (P3C) and a customer.

There is also the option of using ComPair, a hardware interface between a computer (see requirements below) and the TV chassis. It offers the ability of structured troubleshooting, test pattern generation, error code reading, software version readout, and software upgrading.
Minimum requirements: a Pentium processor, Windows 95/98, and a CD-ROM drive (see also paragraph "ComPair").

5.2.1 Service Default Mode (SDM)

Purpose

- To create a pre-defined setting, to get the same measurement results as given in this manual.
- To override SW protections.
- To start the blinking LED procedure.

Specifications

- Tuning frequency: 475.25 MHz for PAL/SECAM.
- Colour system: SECAM L for France or PAL B/G for the rest of Europe.
- All picture settings at 50 % (brightness, colour, contrast).
- All sound settings at 50 %, except volume at 25 %.
- All service-unfriendly modes (if present) are disabled, like:
  - (Sleep) timer.
  - Child/parental lock.
  - Blue mute.
  - Automatic volume limiter (AVL).
  - Auto switch-off (when no video signal was received for 10 minutes).
  - Skip/blank of non-favourite pre-sets.
  - Smart modes.
  - Auto store of personal presets.
  - Auto user menu time-out.

How to enter SDM

Use one of the following methods:

- Use the standard RC-transmitter and key in the code "062596", directly followed by the "MENU" button.
  Note: It is possible that, together with the SDM, the main menu will appear. To switch it off, push the "MENU" button again.
- Short for a moment the two solder pads (item 9018) on the SSP, with the indication "SDM". Activation can be performed in all modes, except when the set has a problem with the main microprocessor.
  Caution: If the SDM is entered via the pins, all the software-controlled protections are de-activated.
- Use the DST-emulation feature of ComPair.
- Use the "DEFAULT" button on the Dealer Service Tool (RC7150).

After entering this mode, "SDM" will appear in the upper right corner of the screen.

How to navigate

When you press the "MENU" button on the RC transmitter, the set will toggle between the SDM and the normal user menu (with the SDM mode still active in the background).

How to exit SDM

Use one of the following methods:

- Switch the set to STANDBY via the RC-transmitter.
- Press the "EXIT" button on the DST.
- Via a standard customer RC-transmitter: key in "00"-sequence.

5.2.2 Service Alignment Mode (SAM)

Purpose

- To perform (software) alignments.
- To change option settings.
- To easily identify the used software version.
- To view operation hours.
- To display (or clear) the error code buffer.

Specifications

- Operation hours counter.
- Software version.
- Option settings.
- Error buffer reading and erasing.
- Software alignments.

How to enter SAM

Use one of the following methods:

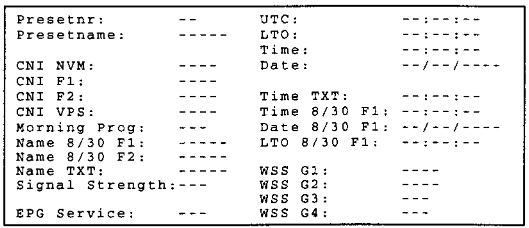
- Via a standard RC transmitter: key in the code "062596" directly followed by the "OSD [i+]" button. After entering SAM with this method a service warning will appear on the screen, you can continue by pressing any digit key on the RC.
- Short for a moment the two solder pads (item 9017) on the SSP with the indication "SAM". Depending on the software version, it is possible that a service warning will appear. You can continue by pressing any digit key on the RC.
- Use the DST-emulation feature of ComPair.
- Press the ALIGN button on the DST while the set is in the normal operation

After entering this mode, "SAM" will appear in the upper right corner of the screen.

Contents of SAM:

- **OPERATION HOURS.** Displays the accumulated total of operation hours (not the standby hours).
- **HARDWARE INFO.**
  - **ROM VERSION.** Displays the date of the software and the software version of the ROM (**example:** TL13EU_1.0_01234 = AAAABB_X.Y_NNNNN).
    - **AAAA**= the chassis name.

        - **BB**= the region: EU= Europe, AP= Asia Pacific PAL/Multi, AN= Asia Pacific NTSC, US= USA, LT= LATAM.
        - **X.Y**= the software version, where X is the main version number (different numbers are not compatible with one another) and Y is the sub version number (a higher number is always compatible with a lower number).
        - **NNNNN**= last five digits of 12nc code software.
    - **SW VERSION EPLD.** Displays the software version of the EPLD.
- **ERRORS.** (followed by maximal 10 errors). The most recent error is displayed at the upper left (for an error explanation see paragraph "Error Codes").
- **DEFECTIVE MODULE.** Here the module that generates the error is displayed. If there are multiple errors in the buffer, which are not all generated by a single module, there is probably another defect. It will then display the message "UNKNOWN" here.
- **RESET ERROR BUFFER.** When you press the "OK" button, the error buffer is reset.
- **ALIGNMENTS.** This will activate the "ALIGNMENTS" sub-menu.
- **DEALER OPTIONS.** Extra features for the dealers.
- **SERVICE OPTIONS.** Extra features for Service.
- **INITIALISE NVM.** When an NVM was corrupted (or replaced) in the former EM3 chassis, the microprocessor replaces the content with default data (to assure that the set can operate). However, all pre-sets and alignment values are gone now, and option numbers are not correct. Therefore, this was a very drastic way. In this chassis, the procedure is implemented in another way: The moment the processor recognises a corrupted NVM, the "initialise NVM" line will be highlighted. Now, you can do two things (dependent of the service instructions at that moment):
    - Save the content of the NVM via ComPair for development analysis, **before** initialising. This will give the Philips Service department an extra possibility for diagnosis (e.g. when Development asks for this).
    - Initialise the NVM (same as in the past, however now it happens conscious).
- **STORE.** All options and alignments are stored when pressing the "OK"-button
- **FUNCTIONAL TEST.** All devices are tested via the "OK" button. Eventual errors are displayed in the error buffer. The error buffer is not erased, the content returns when this test is terminated.
- **DAILY MENUS.** With the "OK" button, you can go to the normal user menu. SAM is still active in the background. With the "MENU" button, you return from the user menu to SAM menu. This feature can be helpful to quickly change some settings in the user menu.
- **SW MAINTENANCE.**
    - **UPGRADE.** More info see paragraph Software downloading.
    - **EVENTS.** Not useful for service purposes. In case of specific software problems, the development department can ask for this info.
    - **BDM INFO.** Broadcast Debug Menu info. The purpose of this menu is to debug the broadcast, **not** the TV. The menu gives an overview of what is received on the current preset. Following items are displayed:



```
Presetnr:          --      UTC:           --:--:--
Presetname:        -----   LTO:           --:--:--
                           Time:          --:--:--
CNI NVM:           ----    Date:          --/--/----
CNI F1:            ----
CNI F2:            ----    Time TXT:      --:--:--
CNI VPS:           ----    Time 8/30 F1:  --:--:--
Morning Prog:      ---     Date 8/30 F1:  --/--/----
Name 8/30 F1:      -----   LTO 8/30 F1:   --:--:--
Name 8/30 F2:      -----
Name TXT:          -----   WSS G1:        ----
Signal Strength:---        WSS G2:        ----
                           WSS G3:        ---
EPG Service:       ---     WSS G4:        ---
```

CL 36532017_055.eps
240403

Figure 5-1 Broadcast debug menu overview

Table 5-1 Broadcast debug menu explanation

Item	Source	Description
Presetnr	Set	Presetnumber of the current selected preset.
Presetname	Set	Presetname of the current selected preset.
CNI NVM	Broadcaster	CNI number stored in NVM for the current preset.
CNI F1	Broadcaster	CNI number from transmitted Packet 8/30 Format 1.
CNI F2	Broadcaster	CNI number from transmitted Packet 8/30 Format 2.
CNI VPS	Broadcaster	CNI number from transmitted VPS line.
Morning Prog	Broadcaster	"ARD" or "ZDF" according to dedicated bit in 8/30 Format 1.
Name 8/30 F1	Broadcaster	Name extracted from status message of 8/30 Format 1.
Name 8/30 F2	Broadcaster	Name extracted from status message of 8/30 Format 2.
Name TXT	Broadcaster	Name extracted from TXT header.
Signal Strength	FBX	Noise figure measured for selected preset.
EPG Service	Set	EPG Service stored in NVM for current preset displayed as "TXT", "MCP", "SCP", "OCP".
UTC	Set	UTC (Universal Time Code formerly known as Greenwich Mean Time) used in the set.
LTO	Set	LTO (Local Time Offset) used in the set. Used by EPG for all Nextview displays. (= Time TXT header - Time 8/30 F1)
Time	Set	Current time running in the set. Was extracted at startup, then maintained by software.
Date	Set	Current date running in the set. Was extracted at startup, then maintained by software.
Time TXT	Broadcaster	TXT header time from the selected preset.
Time 8/30 F1	Broadcaster	UTC time from 8/30 Format 1.
Date 8/30 F1	Broadcaster	Date from 8/30 Format 1.
LTO 8/30 F1	Broadcaster	LTO from 8/30 Format 1.
WSS G1	Broadcaster	WSS Group 1 (Aspect Ratio) bits 0 1 2 3
WSS G2	Broadcaster	WSS Group 2 (Enhanced Services) bits 4 5 6 7
WSS G3	Broadcaster	WSS Group 3 (Subtitles) bits 8 9 10
WSS G4	Broadcaster	WSS Group 4 (Reserved) bits 11 12 13

How to navigate

- In SAM, you can select the menu items with the "CURSOR UP/DOWN" key on the RC-transmitter. The selected item will be highlighted. When not all menu items fit on the screen, move the "CURSOR UP/DOWN" key to display the next/previous menu items.
- With the "CURSOR LEFT/RIGHT" keys, it is possible to:
    - (De) activate the selected menu item.
    - Change the value of the selected menu item.
    - Activate the selected submenu.

How to exit SAM

Use one of the following methods:

- Press the "MENU" button on the RC-transmitter, or

- Switch the set to STANDBY via the RC-transmitter, or
- Press the "EXIT" button on the DST.

5.2.3 Customer Service Mode (CSM)

Purpose

When a customer is having problems with his TV-set, he can call his dealer. The service technician can than ask the customer to activate the CSM, in order to identify the status of the set. Now, the service technician can judge the severity of the complaint. In many cases, he can advise the customer how to solve the problem, or he can decide if it is necessary to visit the customer.
The CSM is a read only mode; therefore, modifications in this mode are not possible.

How to enter CSM

Use one of the following methods:

- Press the "MUTE" button on the RC-transmitter **simultaneously** with the "MENU" button on the TV (top control) for at least 4 seconds.
- Key in the code "123654" via the standard RC transmitter.

Note: Activation of the CSM is only possible if there is no (user) menu on the screen!

How to navigate

By means of the "CURSOR-DOWN/UP" knob on the RC-transmitter, you can navigate through the menus.

Contents of CSM

CUSTOMER SERVICE MENU 1

- **SOFTWARE VERSION (example: TL13EU_1.0_01234).** Displays the built-in software version. In case of field problems related to software, software can be upgraded (for more details, see paragraph Software downloading). You will find details of the software versions in the chapter "Software Survey" of the "Product Survey - Colour Television" publication. This publication is generated four times a year.
- **SOFTWARE VERSION EPLD.** The 12NC-number of the built-in EPLD software.
- **FEATURE BOX.** The 12NC-number of the built-in Feature Box software.
- **SET TYPE.** This information is very helpful for a helpdesk/workshop as reference for further diagnosis. In this way, it is not necessary for the customer to look at the rear of the TV-set.
- **CODE 1.** Gives the latest five errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted. The last occurred error is displayed on the leftmost position. Each error code is displayed as a 3-digit number. When less than 10 errors occur, the rest of the buffer is empty (000). See also paragraph Error Codes for a description.
- **CODE 2.** Gives the first five errors of the error buffer. See also paragraph Error Codes for a description.
- **VOLUME.** Gives the last status of the volume as set by the customer. The value can vary from 0 (volume is minimum) to 100 (volume is maximum). Volume values can be changed via the volume key on the RC-transmitter.
- **BRIGHTNESS.** Gives the last status of the brightness as set by the customer. The value can vary from 0 (brightness is minimum) to 100 (brightness is maximum). Brightness values can be changed via the "CURSOR LEFT" and "CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "PICTURE" and "BRIGHTNESS".
- **CONTRAST.** Gives the last status of the contrast as set by the customer. The value can vary from 0 (contrast is minimum) to 100 (contrast is maximum). Contrast values can be changed via "CURSOR LEFT" and "CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "PICTURE" and "CONTRAST".

CUSTOMER SERVICE MENU 2

- **COLOUR.** Gives the last status of the colour saturation, as set by the customer. The value can vary from 0 (colour is minimum) to 100 (colour is maximum). Colour values can be changed via "CURSOR LEFT" and "CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "PICTURE" and "COLOUR".
- **HUE.** Only relevant for NTSC-signals (e.g. some NTSC-DVD-discs).
- **SHARPNESS.** Gives the sharpness value. The value can vary from 0 (sharpness is minimum) to 7 (sharpness is maximum). In case of bad antenna signals, a too high value of the sharpness can result in a noisy picture. Sharpness values can be changed via the "CURSOR LEFT" and "CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "PICTURE" and "SHARPNESS".
- **HEADPHONE VOLUME.** Gives the last status of the headphone volume, as set by the customer. The value can vary from 0 (volume is minimum) to 100 (volume is maximum). Headphone volume values can be changed via the "CURSOR LEFT" and "CURSOR RIGHT" keys on the RC-transmitter after pressing the "MENU" button and selecting "SOUND" and "HEADPHONE VOLUME".
- **SURROUND MODE.** Indicates the by the customer selected surround mode (or automatically chosen mode). Possible values are "OFF", "INCREDIBLE SURROUND" OR "DOLBY VIRTUAL". These settings can be influenced after pressing the "MENU" button and selecting "SOUND" and SURROUND MODE". It can also have been selected automatically by signalling bits (internal software).
- **TUNER FREQUENCY.** Indicates the frequency the selected transmitter is tuned to. The tuner frequency can be changed via the "CURSOR LEFT" and "CURSOR RIGHT" keys for fine tune after opening the installation menu and selecting "INSTALL" and "MANUAL INSTALL".
- **DIGITAL OPTION.** Gives the selected digital mode, "PROGRESSIVE SCAN", "MOVIE PLUS" or "PIXEL PLUS". Change via "MENU", "PICTURE", "DIGITAL OPTIONS".
- **TV SYSTEM.** Gives information about the video system of the selected transmitter.
  - BG: PAL BG signal received.
  - DK: PAL DK signal received.
  - I: PAL I signal received.
  - L/La: SECAM L/La signals received.
  - M: NTSC M signal received with video carrier on 38.9 MHz.
- **BALANCE.** Indicates the balance settings, between "-50" and "+50". Change via "MENU", "SOUND", and "BALANCE". Not applicable for Dolby Pro Logic sets.

CUSTOMER SERVICE MENU 3

- **CENTRE MODE.** Indicates if centre mode is set "ON" or "OFF". When centre mode is on, all TV speakers are used as one centre speaker. Change Centre mode via "MENU", "SETUP", "SPEAKERS", and "CENTRE MODE".
- **DNR.** Gives the selected DNR setting (Dynamic Noise Reduction), "OFF", "MINIMUM", "MEDIUM", or "MAXIMUM". Change via "MENU", "PICTURE", "DNR"
- **NOISE FIGURE.** Gives the noise ratio for the selected transmitter. This value can vary from 0 (good signal) to 127 (average signal) and to 255 (bad signal). For some software versions, the noise figure will only be valid when "Active Control" is set to "medium" or "maximum".
- **SOURCE.** Indicates which source is used and the video/audio signal quality of the selected source. (Example: Tuner, Video/NICAM) Source: "TUNER", "EXT1", "EXT2", "EXT3", "EXT4", "SIDE", "AV1", "AV2", "AV3" or "AV4". Video signal quality: "VIDEO", "S-VIDEO", "RGB 1FH", "YPBPR 1FH 480P", "YPBPR 1FH 576P", "YPBPR 1FH

1080I", "YPBPR 2FH 480P", "YPBPR 2FH 576P", "YPBPR 2FH 1080I", "RGB 2FH 480P", "RGB 2FH 576P" or "RGB 2FH 1080I". Audio signal quality: "STEREO", "SPDIF 1", "SPDIF 2", or "SPDIF".
- **AUDIO SYSTEM.** Gives information about the audio system of the selected transmitter: "ANALOGUE MONO", "ANALOGUE STEREO", "PCM 2/0", "DD 1/0", "DD 2/0 LtRt", "DD 2/0 LORO", "DD 2/1", "DD 2/2", "DD 3/0", "DD 3/1", "DD 3/2", "DD 1+1", "MPEG 1/0", "MPEG 2/0", "MPEG 2/0 LtRt", "MPEG 2/1", "MPEG 2/2", "MPEG 3/0", "MPEG 3/1", "MPEG 3/2", "MPEG 1+1" or "MPEG 2+2".
- **TUNED BIT.** Gives information about the tuning method of the stored pre-set. If a channel is found via "automatic installation", you will see the value "YES". When you change this (automatically found) frequency via "fine tune" adjustment (installation menu - manual installation), the displayed value will change to "NO". Therefore, when you see the value "NO" in this line, it is an indication that the received channel is a non-standard signal (e.g. of a VCR).
- **SURROUND SPEAKERS.** Not applicable in this set.
- **ON TIMER.** Indicates if the "On Timer" is set "ON" or "OFF" and if the timer is "ON" also displays start time, start day and program number. Change via "MENU", "TV", "FEATURES", and "ON TIMER".
- **PRESET LOCK.** Indicates if the selected preset has a child lock: "LOCKED" or "UNLOCKED". Change via "MENU", "TV", "FEATURES", "CHILD LOCK", and "CUSTOM LOCK".
- **CHILD LOCK.** Indicates the last status of the general child lock: "UNLOCK", "LOCK", or "CUSTOM LOCK". Change via "MENU", "TV", "FEATURES", "CHILD LOCK", and "LOCK".

CUSTOMER SERVICE MENU 4
- **AGE LOCK.** Indicates the last status of the EPG rating for child lock: "OFF", "4 YEARS", "6 YEARS", "8 YEARS", "10 YEARS", "12 YEARS", "14 YEARS" or "16 YEARS". This is only displayed if child lock is set to "CUSTOM LOCK"
- **LOCK AFTER.** Indicates at what time the child lock is set: "OFF" or e.g. "18:45" (lock time). This is only displayed if child lock is set to "CUSTOM LOCK"
- **CATEGORY LOCK.** Indicates the last status of the EPG theme childlock: "MOVIES", "NEWS", "SHOWS", "SPORTS", "CHILDREN", "MUSIC", "CULTURE", or "SERIES". This is only displayed if child lock is set to "CUSTOM LOCK". It is possible that more than one value is shown.
- **PROGRAM CATEGORY.** Indicates the theme of the selected transmitter: "MOVIES", "NEWS", "SHOWS", "SPORTS", "CHILDREN", "MUSIC", "CULTURE", or "SERIES".
- **TV RATINGS LOCK.** Only applicable for US.
- **MOVIE RATINGS LOCK.** Only applicable for US.
- **V-CHIP TV STATUS.** Only applicable for US.
- **V-CHIP MOVIE STATUS.** Only applicable for US.
- **OPTIONS 1.** Gives the option codes of option group 1 as set in SAM (Service Alignment Mode).
- **OPTIONS 2.** Gives the option codes of option group 2 as set in SAM (Service Alignment Mode).

CUSTOMER SERVICE MENU 5
- **AVL.** Indicates the last status of AVL (Automatic Volume Level): "ON" or "OFF". Change via "MENU", "TV", "SOUND", "AVL"
- **DELTA VOLUME.** Indicates the last status of the delta volume for the selected preset as set by the customer: from "-12" to "+12". Change via "MENU", "TV", "SOUND", "DELTA VOLUME".

How to exit CSM

Use one of the following methods:
- After you press a key on the RC-transmitter (with exception of the "CHANNEL", "VOLUME" and digit (0-9) keys), or
- After you switch the TV-set "OFF" with the mains switch.

5.3 Problems and Solving Tips (related to CSM)

Note: Below described problems are all related to the TV settings (visible in the CSM menu). The procedures to change the value (or status) of the different settings are described above. New value(s) are automatically stored.

5.3.1 Picture Problems

Snowy/noisy picture
1. Check in CSM line NOISE FIGURE. In case the value is "127" or higher, and the value is also high on other programs, check the aerial cable/aerial system. For some software versions, the noise figure will only be valid when "Active Control" is set to "medium" or "maximum".
2. Check in CSM lines SHARPNESS and NOISE FIGURE. In case the value of line SHARPNESS is "3" or "4" and the value of line NOISE FIGURE is high ("127" or higher), decrease the "Sharpness" value.

Picture too dark
1. Press "Menu", "TV", "Picture", "Smart Picture". In case the picture improves, increase the "Brightness" or the "Contrast" value. The new value(s) are automatically stored (in "personal" pre-set) for all TV channels.
2. Check in CSM line BRIGHTNESS and CONTRAST. If the value of these lines is low (< "10"), increase the "Brightness" or the "Contrast" value via the user menu.

Picture too bright
1. Press "Menu", "TV", "Picture", "Smart Picture". In case the picture improves, decrease the "Brightness" or the "Contrast" value. The new value(s) are automatically stored (in "personal" pre-set) for all TV channels.
2. Check in CSM lines BRIGHTNESS and CONTRAST. If the value of these line is high (> 50), decrease the "Brightness" value or increase the "Contrast" value via the user menu.

White line around picture elements and text
1. Press "Menu", "TV", "Picture", "Smart Picture". In case the picture improves, decrease the "Sharpness" value. The new value is automatically stored (in "personal" pre-set) for all TV channels.
2. Check in CSM line "Sharpness". If the value is high, decrease it. The new value is automatically stored for all TV channels.

No picture

Check in CSM line TUNED BIT. In case the value is "No", install the required program again. Open the installation menu and perform manual installation.

No picture

No proper signal is received. Check the aerial cable/aerial system.

No picture or unstable picture

A scrambled or decoded signal is received.

Black and white picture

Check in CSM line COLOUR. In case the value is low (< "10"), increase the "Colour" value via the user menu. The new value is automatically stored for all TV channels.

No colours/colour lines around picture elements or colours not correct or unstable picture
1. Check in CSM line TV SYSTEM. If a "strange" system pops up, something has gone wrong during installation. Re-install the channel.
2. If in CSM line TV SYSTEM is "L", the installed system for this pre-set is "France", while "West Europe" is required. Install the required program again: open the installation

menu and perform manual installation. Select system "West Europe".

Menu text not sharp enough

1. Press "MENU", "TV", "PICTURE", "SMART PICTURE". In case picture improves, decrease the contrast value. The new value(s) are automatically stored for all TV channels.
2. Check line 8 "Contrast". The value of line 8 is high (> 50). Decrease the contrast value.

5.3.2 Sound Problems

No sound from left and right speaker

Check line 6 "Volume". The value is low. Increase the value of "Volume". The new value(s) are automatically stored (in "personal" pre-set) for all TV channels.

Sound too loud for left and right speaker

Check line 6 "Volume". The value is high. Decrease the value of "Volume". The new value(s) are automatically stored (in "personal" pre-set) for all TV channels.

5.4 ComPair

5.4.1 Introduction

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control), which allows faster and more accurate diagnostics. ComPair has three big advantages:

- ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
- ComPair allows very detailed diagnostics (on I2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I2C commands yourself because ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

5.4.2 Specifications

ComPair consists of a Windows based faultfinding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial or RS232 cable.
For this chassis, the ComPair interface box and the TV communicate via a bi-directional service cable via the service connector.

The ComPair faultfinding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:

- Automatic (by communication with the television): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I2C level. ComPair can access the I2C bus of the television. ComPair can send and receive I2C commands to the micro controller of the television. In this way, it is possible for ComPair to communicate (read and write) to devices on the I2C busses of the TV-set.
- Manually (by asking questions to you): Automatic diagnosis is only possible if the micro controller of the television is working correctly and only to a certain extends. When this is not the case, ComPair will guide you through the faultfinding tree by asking you questions (e.g. *Does the screen give a picture? Click on the correct answer: YES / NO*) and showing you examples (e.g. *Measure test-point I7 and click on the correct oscillogram you see on the oscilloscope*). You can answer by clicking on a link (e.g. text or a waveform picture) that will bring you to the next step in the faultfinding process.

By a combination of automatic diagnostics and an interactive question / answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Beside fault finding, ComPair provides some **additional features** like:

- Up- or downloading of pre-sets.
- Managing of pre-set lists.
- Emulation of the Dealer Service Tool (DST).
- If both ComPair and SearchMan (Electronic Service Manual) are installed, all the schematics and the PWBs of the set are available by clicking on the appropriate hyperlink.
  Example: *Measure the DC-voltage on capacitor C2568 (Schematic/Panel) at the Mono-carrier.*
  - Click on the "Panel" hyperlink to automatically show the PWB with a highlighted capacitor C2568.
  - Click on the "Schematic" hyperlink to automatically show the position of the highlighted capacitor.

5.4.3 Stepwise Start-up

Under normal circumstances, a fault in the power supply, or an error during start-up, will switch the television to protection mode. ComPair can take over the initialisation of the television. In this way, it is possible to distinguish which part of the start-up routine (hence which circuitry) is causing the problem. Take notice that the transition between two steps can take some time, so give the set some time to reach a stable state. During the transition time, the LED can blink strangely.

Stepwise start- up explanation

This is realised via ComPair and is very helpful when a **protection** is activated (see also chapter "Protections"). The following diagram shows the start-up procedure of the set. Every step of the stepwise start-up (also called trapped start-up) in the diagram corresponds with the number of times the led blinks.

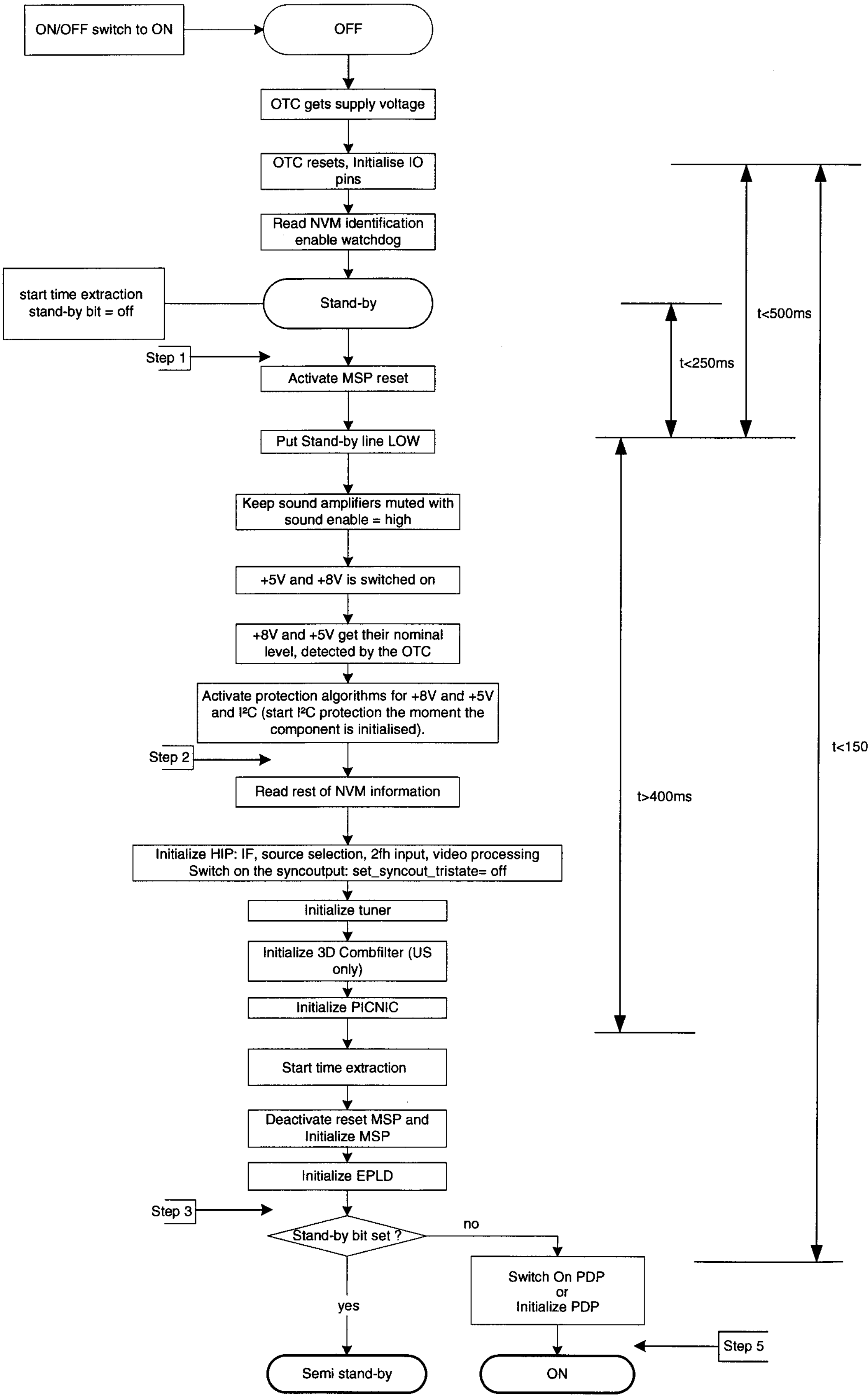

ON/OFF switch to ON
OFF
OTC gets supply voltage
OTC resets, Initialise IO pins
Read NVM identification enable watchdog
start time extraction stand-by bit = off
Stand-by
Step 1
Activate MSP reset
Put Stand-by line LOW
Keep sound amplifiers muted with sound enable = high
+5V and +8V is switched on
+8V and +5V get their nominal level, detected by the OTC
Activate protection algorithms for +8V and +5V and I²C (start I²C protection the moment the component is initialised).
Step 2
Read rest of NVM information
Initialize HIP: IF, source selection, 2fh input, video processing Switch on the syncoutput: set_syncout_tristate= off
Initialize tuner
Initialize 3D Combfilter (US only)
Initialize PICNIC
Start time extraction
Deactivate reset MSP and Initialize MSP
Initialize EPLD
Step 3
Stand-by bit set ?
no
yes
Switch On PDP or Initialize PDP
Semi stand-by
ON
Step 5
t<500ms
t<250ms
t>400ms
t<1500ms
CL 36532053_06[illegible]ps
22[illegible]03

Figure 5-2 Stepwise start-up diagram

Note (*):

- When the set is in stepwise mode and, due to stepping-up, a protection is activated, the set will really go into protection (blinking LED). The set will not leave the stepwise-mode however. If state X is the state where the set went to protection, stepwise start-up will return to state X-1. At state (X-1) diagnostic measurements can be performed. Also, in the short time the set is in state X but not yet in protection, you can also do some measurements.

5.4.4 How To Connect

1. First, install the ComPair Browser software (see the Quick Reference Card for installation instructions).
2. Connect the RS232 interface cable between a free serial (COM) port of your PC and the PC connector (marked with "PC") of the ComPair interface.
3. Connect the mains adapter to the supply connector (marked with "POWER 9V DC") of the ComPair interface.
4. Switch the ComPair interface "OFF".
5. Switch the television set "OFF" with the mains switch.
6. Connect the ComPair interface cable between the connector on the rear side of the ComPair interface (marked with "I2C") and the ComPair connector at the rear side of the TV.
7. Plug the mains adapter in a mains outlet, and switch the interface "ON". The green and red LEDs light up together. The red LED extinguishes after approx. 1 second while the green LED remains lit.
8. Start the ComPair program and read the "Introduction" chapter.

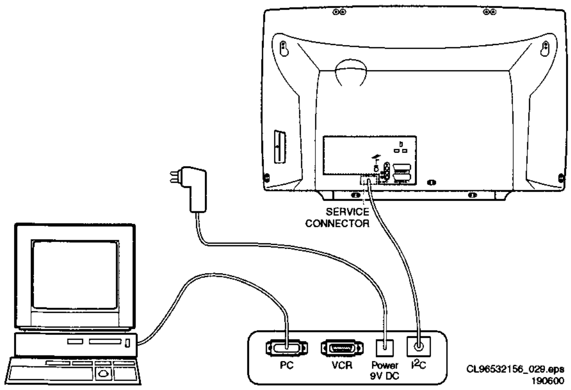


Figure 5-3 ComPair Unit

5.4.5 How To Order

ComPair order codes (EU/AP/LATAM):

- Starter kit ComPair32/SearchMan32 software and ComPair interface (excl. transformer): 3122 785 90450.
- ComPair interface (excluding transformer): 4822 727 21631.
- Starter kit ComPair32 software (registration version): 3122 785 60040.
- Starter kit SearchMan32 software: 3122 785 60050.
- ComPair32 CD (update): 3122 785 60070 (year 2002, 3122 785 60110 (year 2003).
- SearchMan32 CD (update): 3122 785 60080 (year 2002), 3122 785 60120 (year 2003).
- ComPair interface cable: 3122 785 90004.
- ComPair firmware upgrade IC: 3122 785 90510.
- Transformer Europe: 4822 727 21632.
- Transformer UK: 4822 727 21633.

Note: If you encounter any problems, contact your local support desk.

5.5 Error Codes

5.5.1 Introduction

The error code buffer contains all detected errors since the last time the buffer was erased. The buffer is written from left to right, new errors are logged at the left side, and all other errors shift one position to the right.
When an error has occurred, the error is added to the list of errors, provided the list is not full or the error is a protection error.
When an error occurs and the error buffer is full, then the new error is not added, and the error buffer stays intact (history is maintained), except when the error is a protection error.
To prevent that an occasional error stays in the list forever, the error is removed from the list after 50+ operation hours.
When multiple errors occur (errors occurred within a short time span), there is a high probability that there is some relation between them.

5.5.2 How to read the Error Buffer

Use one of the following methods:

- On screen via the SAM (only if you have a picture). Examples:
  - **0 0 0 0 0**: No errors detected
  - **6 0 0 0 0**: Error code 6 is the last and only detected error
  - **9 6 0 0 0**: Error code 6 was first detected and error code 9 is the last detected error
- Via the blinking LED procedure (when you have no picture). See next paragraph.
- Via ComPair.

5.5.3 How to clear the Error Buffer

Use one of the following methods:

- By activation of the "RESET ERROR BUFFER" command in the SAM menu.
- With a normal RC, key in sequence "MUTE" followed by "062599" and "OK".
- When you transmit the commands "DIAGNOSE" - "99" - "OK" with ComPair (or with a DST).
- If the content of the error buffer has not changed for 50+ hours, it resets automatically.

5.5.4 Error Codes

In case of non-intermittent faults, clear the error buffer before you begin the repair. This to ensure that old error codes are no longer present. Before clearing the buffer, write down the content, as this history can give you significant information.
If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error code and not the actual cause (e.g., a fault in the protection detection circuitry can also lead to a protection).
There are various errors:

- I2C device errors.
- I2C bus errors.
- Protection errors.
- Errors not related to an I2C device, but of importance:
  - **FALCONIC (ERROR 26):** at start-up, after initialisation of the PICNIC, the presence of the FALCONIC can be checked.
  - **EAGLE (ERROR 27):** at start-up, after initialisation of the PICNIC, the presence of the Eagle can be checked.

Table 5-2 Table Errors

Error	Device	Description	Def. item	Def. Module indication	Diagram
1	M24C32	NVM, spontaneous blinking error 1	7011	Control	B5a
3	SAA4978	PICNIC	7713	Feature Box	B3a
4	Supply 5 V	5V protection	/	+5V Supply	B5a
5	Supply 8 V	8V protection	/	+8V Supply	B5a
6	Slow I2C bus blocked	Spontaneous blinking error 6	/	Slow I2C Blocked	/
8	TDA932x	HIP High-end Input Processor	7323	Chroma IF IO	B2
13	UV1318/...	Tuner protection	1T01	Tuner	B13
14	MSPxxxx	ITT sound processor	7A02	Audio module	B6a
18	Fast I2C bus blocked	Spontaneous blinking error 18	/	Fast I2C Blocked	/
21	M62320P	I/O Expander	7P56	Video Dual Screen	B15b
26	SAA4992	Falconic	7718	+3V (FBX) Supply	B3b
27	T8F24EF	Eagle	7724	+3V (FBX) Supply	B3c
32	M29W400BT	Flash Ram (EPG)	7012	EPG Memory	B5a
53	AD9883A	AD converter 2fh input	7L01	HD	B19c
55	DC/DC converter	One of the voltages is not ok + protection error	/	Supply	/
56	EPLD	EPLD error	7V01	Video control	B19d,f
76	-	Audio DC protection	-	-	A
83	TEA6422	Source select matrix audio	7117	Audio Source Select	B14d

Note:
- Error codes 1, 6, or 18 are protection codes and in this case, supplies of some circuits will be switched “OFF”. Also, in protection, the LED will blink the number of times equivalent to the most recent error code.

5.6 The Blinking LED Procedure

5.6.1 Introduction

Via this procedure, you can make the contents of the error buffer visible via the front LED. This is especially useful for fault finding, when there is no picture.

When the SDM is entered, the front LED will show (blink) the contents of the error-buffer. Error-codes > 10 are shown as follows:
- A long blink of 750 ms (which is an indication of the decimal digit),
- A pause of 1.5 s,
- “n” short blinks (where “n” = 1 - 9),
- When all the error-codes are displayed, the sequence finishes with a LED blink of 3 s,
- The sequence starts again.

Example: Error 12 9 6 0 0.
After activation of the SDM, the front LED will show:
- 1 long blink of 750 ms (which is an indication of the decimal digit) followed by a pause of 1.5 s,
- 2 short blinks followed by a pause of 3 s,
- 9 short blinks followed by a pause of 3 s,
- 6 short blinks followed by a pause of 3 s,
- 1 long blink of 3 s to finish the sequence,
- The sequence starts again.

Note: If errors 1, 6, or 18 occur, the LED always gives the last occurred error even if the set is NOT in service mode.

5.6.2 How to Enter

Use one of the following methods:
- Enter the SDM (only via soldering pads marked “SDM” on SSP). The blinking front LED will show the entire contents of the error buffer (this works in “normal operation” mode and in “protection” mode).
- Transmit the commands “MUTE” - “062500” - “OK” with a normal RC. The complete error buffer is shown. Take notice that it takes some seconds before the blinking LED starts.
- Transmit the commands “MUTE” - “06250x” - “OK” with a normal RC (where “x” is a number between 1 and 5). When x= 1 the last detected error is shown, x= 2 the second last error, etc.... Take notice that it takes some seconds before the blinking LED starts.
- “DIAGNOSE X” with the DST (where “x” is a number between 1 and 5). When x= 1 the last detected error is shown, x= 2 the second last error, etc.... When x = 0 all errors are shown.

5.7 Protections

5.7.1 Introduction

This chassis has only one microprocessor (OTC), which remains active during Standby. This because power of the microprocessor and the attached memory chip set is coming from the 3V3 supply, which is derived from the 5V Standby-circuitry. Therefore, in both Power-on as in Standby mode, the microprocessor is connected to this power supply.

If a fault situation is detected, an error code will be generated and if necessary, the set is put in protection mode. The protection mode is indicated by the blinking of the front LED at a frequency of 3 Hz (or by a coded blinking in special cases).

The content of the error buffer can be read via the service menu (SAM), the blinking LED procedure or via DST/ComPair.

To get a quick diagnosis, this chassis has three service-modes implemented:
- The **Customer Service Mode** (CSM).
- The **Service Default Mode** (SDM). Start-up of the set in a predefined way.
- The **Service Alignment Mode** (SAM). In this mode, items of the set can be adjusted via a menu.

You can enter both SDM and SAM modes via the “service pads” on the SSP, via an RC-transmitter (DST or standard RC), or via ComPair. It is not possible to enter the SAM in “standby”; the TV has to be in “normal operation” mode.

The “Protection Diagram” shows the structure of the protection system. See diagram below.

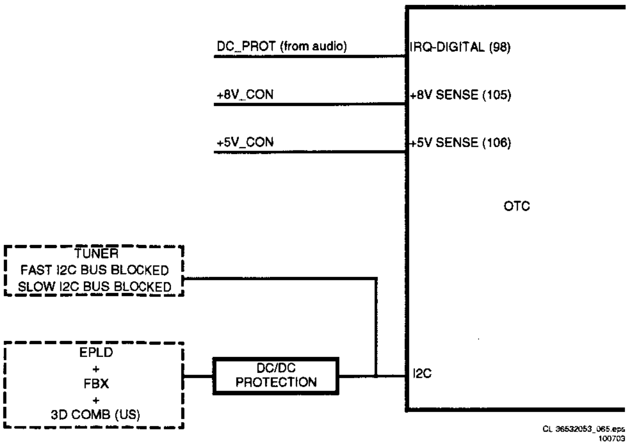


Figure 5-4 Protection diagram.

There are several types of protections:

- I2C related protections.
- OTC related protections (via polling on I/O pins or via algorithms).
- Hardware protection

All protections are explained below.

5.7.2 I2C Related Protections

In normal operation, some registers of the I2C controlled ICs are refreshed every 200 ms. During this sequence, the I2C busses and the I2C ICs are checked.
An I2C protection will take place if the SDA and SCL lines are short-circuited to ground, or to each other. An I2C error will also occur, if the power supply of the IC is missing.

DC/DC protection: When a 3V3 supply is short-circuited the DC/DC converter switches off and goes in protection. The FBX, EPLD IC, and 3D comb IC (US only) have no supply voltage and give no acknowledge. In this case, the set should go into protection. An error code is written in the NVM: DC/DC error.

FBX protection: the FBX protection is not available any more. It is replaced by the DC/DC protection.

5.7.3 OTC Related Protections

If a protection is detected at an OTC input, the OTC will start to scan all protection inputs every 200 ms for 5 times. If the protection on one of the inputs is still active after 1 s, the microprocessor will put the set in the protection mode. Before the scanning is started, a so-called "ESD refresh" is carried out. This is done, because the interrupt on one of the inputs is possibly caused either by a flash or by ESD. As a flash or ESD can influence IC settings, the HIP, MSP, 3D Comb (US only) and wireless module (not used in this set) are initialised again, to ensure the normal picture and sound conditions of the set.

8 V and 5 V protections: The microprocessor senses the presence of the 8 V and 5 V (via the "+5V_CON" and "+8V_CON" lines). If one (or both) of these voltages is (are) not present, an error code is stored in the error buffer of the NVM, and the set is put in the protection mode.

Audio DC protection: The OTC senses if the audio module is in protection via IRQ-DIGITAL (pin 98 of OTC). If this is the case, the OTC puts the set in protection.

5.7.4 Hardware Protection

Short-circuiting the 3V3 supply from the DC/DC converter will shut down the DC/DC converter. The absence of the 3V3 supply line is also sensed via I2C (see description DC/DC protection above), this is useful if there is something wrong in the detection circuit of the DC/DC converter. There are no hardware protections in this chassis, which switch off the supply.

5.8 Repair tips

5.8.1 3V3 Supply (DC/DC converter)

As mentioned above, the DC/DC converter is switched "off" when something goes wrong (detection of a missing 3V3 supply at one of the devices supplied by the 3V3).
Because of this, the set goes to protection (I2C protection). Error code 55 is logged.
For further diagnoses, you need to overrule the I2C protection: put the set in Service Default Mode by means of the solder pads on the SSB.
The DC/DC converter is still not working because it is switched "off" by the 3V3_FAULT line (schematic B12). Now you have some possibilities:

1. First, measure the impedance over diode 6U06. In normal conditions, you should measure approximately 120 ohm (if possible, verify this with another set). If the impedance is much too low, do not try to start up the converter as mentioned below. Remind that if FET 7U03 is short-circuited, this will also influence your measurement.
2. Desolder coils 5U05 and 5U06, connect an external 3V3 supply at capacitor 2U23 (current limitation to 500 mA) and a second external 3V3 supply at capacitor 2U31 (current limitation to 800 mA). The normal working current of the 3V3_SIM line is approximately 400 mA and the normal working current for the 3V3_DCDCFBX line is approximately 700 mA. Therefore, if one of the currents exceeds their nominal value you can determine in which circuit the overload is situated. If the set would start up and you have normal picture, there is probably no overload but a problem in the detection circuits.
3. If you do not have two external power supplies, you can do the following: Desolder coils 5U02, 5U03, and 5U04 (you must desolder all three, otherwise the circuit could be damaged), connect an external power supply of 3V3 at the cathode of diode 6U06. Make sure to limit the current of this external supply to approximately 1200 mA. If the supplied current exceeds 1100 mA (approximately normal working current) you can conclude that one of the devices supplied by 3V3 is short-circuited.
4. Another possibility is to force the converter to start up by short-circuiting (and keep short-circuited) resistor 3U25 (B12).
   Caution: Be aware that this can damage the set. Even if you measure approximately 120 ohm over diode 6U06, there can still be something wrong in the converter itself. By short-circuiting resistor 3U25, the internal protection of the converter is disabled.

5.8.2 ComPair

This chassis does not have an IR transmitting LED (as in NG-sets). Therefore, a "Service" (ComPair) connector is implemented at the rear side of the set, which is directly accessible (as in A10-, EM2E-, EM3E and EM5E-sets). In addition to this, there is also a blinking LED procedure to show the contents of the error buffer.

When you use ComPair, you have the possibility to activate a "stepwise start-up" mode. With this mode, you can initiate the start-up sequence step by step. This also means that in certain steps, some protections are not activated. This is sometimes very convenient during repair.

5.8.3 Protections

Activating SDM via the “service pads” will overrule the processor-controlled protections, but not the hardware protections. This means, that the A/D-input protections (5 and 8 V) and the I2C “not-acknowledging” info of FBX + EPLD + 3D Comb (US) and of the tuner are overruled.
Caution: When doing this, the service technician must know what he is doing, as it could lead to damaging the set.

5.8.4 Power Supply

The simplest way to repair the power supply is to check (and replace if necessary) the components that are marked grey on schematic SP1.

5.8.5 AUX Supply

First, determine whether one or more of the secondary diodes (6044, 6021, 6291, 6293) are short-circuited. If this is not the case, check (and replace if necessary) the components that are marked grey on schematic SA.

Table 5-3 Repair tips

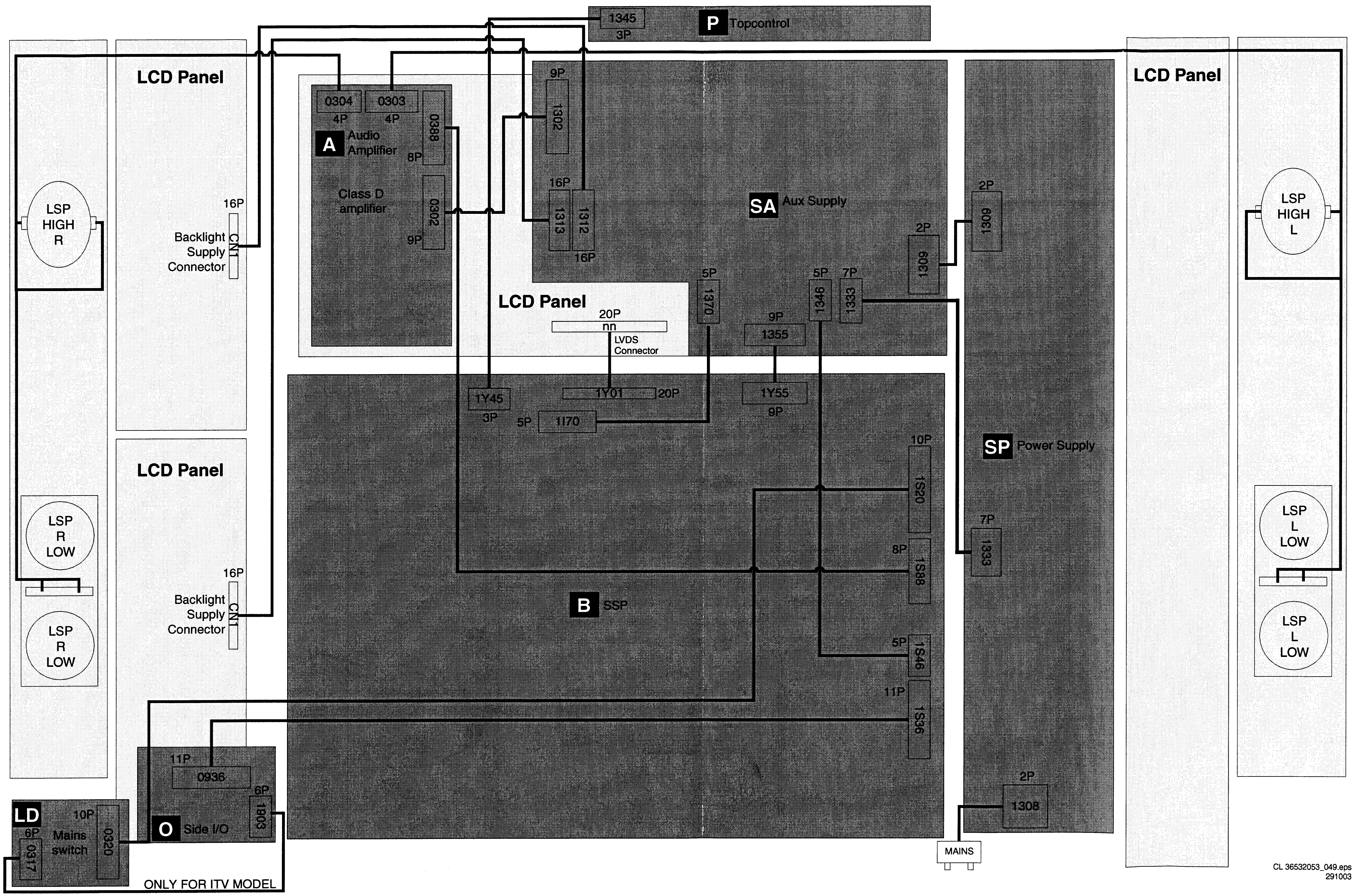
Phenomenon	Possible Cause	Repair tip
No picture, LED blinking at 3 Hz.	Set is in protection due to various causes. For error codes see error-code list.	You have no picture, so: - Read the error buffer via ComPair (error buffer is accessible when set is in protection, compare-file will guide you to this) - Read the blinking LED information via standard remote command **<mute>06250x<ok>**. - Or you read the error code sequence via standard remote command **<mute>062500<ok>**. When you have found the error, check the circuitry related to the supply voltage and I2C-communication or the circuitry that triggers the protection.
No picture, LED blinking with code 6-6-6 or 18-18-18.	No communication on slow I2C- or fast I2C-bus.	As processor cannot communicate with one of the 2 busses it the standby-led spontaneously starts blinking 6-6-6-etc or 18-18-18-etc... If in the error buffer somewhere is an error 6 or 18, these will have the highest priority starting the mentioned blinking. Measure dependent of the error on the I2C-bus which device is loading the bus. (Use I2C-overview)
No picture, LED blinking with code 1-1-1.	No communication on NVM-I2C bus to the uP.	As the uP cannot communicate with the NVM I2C bus, it spontaneously starts blinking 1-1-1. **Note:** when there is no access to the NVM, a lot of picture setting can go wrong.
No RC-reception. LED does not echo RC-commands.	uP circuitry or RC-receiver is defective.	In case the set does react on a local keyboard operation, you must check the RC-receiver circuitry (diagram LD).
Picture is not synchronised.	The sync is derived in the HIP.	Check crystals in the HIP circuit on bad contacts.
Picture is distorted.	Check video-path in Service Default Mode.	Investigate whether there is an error code present in the error buffer. In case there is one, check the I2C-bus and/or supply lines (see overview supply lines). Measure and check signal path Tuner-HIP-FBX-EPLD.
Picture with horizontal stripes.	Pixel Plus processing is malfunctioning	Check functionality on circuitry (B3a, B3b, and B3c) of PICNIC (7713), FALCONIC (7718, EAGLE (7724) and/or field memories (7714, 7717, 7719, 7722 and 7723. **Tip:** the whole Pixel Plus chipset (3 ICs + 5 Field Memories) can be diagnosed via ComPair.
No menu, no OSD.	Probably a defective uP.	Measure test points B61to B64 on diagram B5A.
No NextView (EPG).	IC7012 defective or not powered.	Check circuitry around IC7012 on diagram B5A.
No Teletext.	IC7007 defective or not powered.	Check circuitry around IC7007 on diagram B5A. Check also B61 to B64 around uP on diagram B5A.
Problems caused by EPG (Electronic Program Guide). The TV set "hangs".	Problems with NexTView EPG broadcasts.	To switch from EPG 2C3 to Teletext guide. Press for 4 seconds, simultaneously the Menu button on the TV and digit 0 on the remote. The option settings for NexTView type and Flashram will not change.
NexTView EPG is not functioning only Teletext guide.	EPG version 2C3 is switched off during production.	To switch from Teletext guide to EPG 2C3. Press for 4 seconds, simultaneously the Menu button on the TV and digit 1 on the remote. The option settings for NexTView type and Flashram will not change.
Various symptoms, due to missing local supply voltage.	An interrupted fuse, NFR-resistor or connection.	When no symptom or error code leads you to a specific circuitry, use the supply lines overview (see supply lines overview), for a quick scan of all supply lines.
For ITV (Institutional TV) models, it is possible that the service modes are not functioning as expected.	"Hotel Mode" option is set to "ON". This can cause problems with service modes.	Switch "OFF" the "Hotel Mode" option, in "Service Alignment Mode", "Service Options", "Miscellaneous", "Hotel Mode". After repair this option should be switched on again to use Hotel Mode functionality.

5.9 Software Downloading

In this chassis, you can **upgrade** the software via ComPair without removing the back cover of the set. The switch, which is needed for the software downloading procedure, can be reached through the cooling gaps of the back cover. The switch is located next to the SAM/SDM pads and can be operated with a long and thin screwdriver. Make sure that you do not damage the PWB with sharp objects. You can find more information on how this procedure works in the ComPair file. It is possible that not all sets are equipped with the hardware, needed to make software upgrading possible. To speed up the programming process the firmware of the ComPair interface can be upgraded. See paragraph “How To Order” for the order number

6. Wiring Diagram, Block Diagrams and Overviews

Wiring Diagram


1345
3P
P Topcontrol
LCD Panel
0304
4P
0303
4P
0388
8P
A Audio Amplifier
Class D amplifier
0302
9P
9P
1302
16P
1313
1312
16P
SA Aux Supply
2P
1309
2P
1309
LSP HIGH R
16P
Backlight Supply Connector
CN1
LCD Panel
20P
nn
LVDS Connector
5P
1370
9P
1355
5P
1346
7P
1333
1Y45
3P
5P
1170
1Y01
20P
1Y55
9P
10P
1S20
SP Power Supply
LCD Panel
LSP HIGH L
LSP R LOW
16P
Backlight Supply Connector
CN1
8P
1S88
7P
1333
B SSP
LSP L LOW
LSP R LOW
LSP L LOW
5P
1S46
11P
1S36
11P
0936
6P
1903
O Side I/O
LD
10P
6P
Mains switch
0317
0320
ONLY FOR ITV MODEL
2P
1308
MAINS

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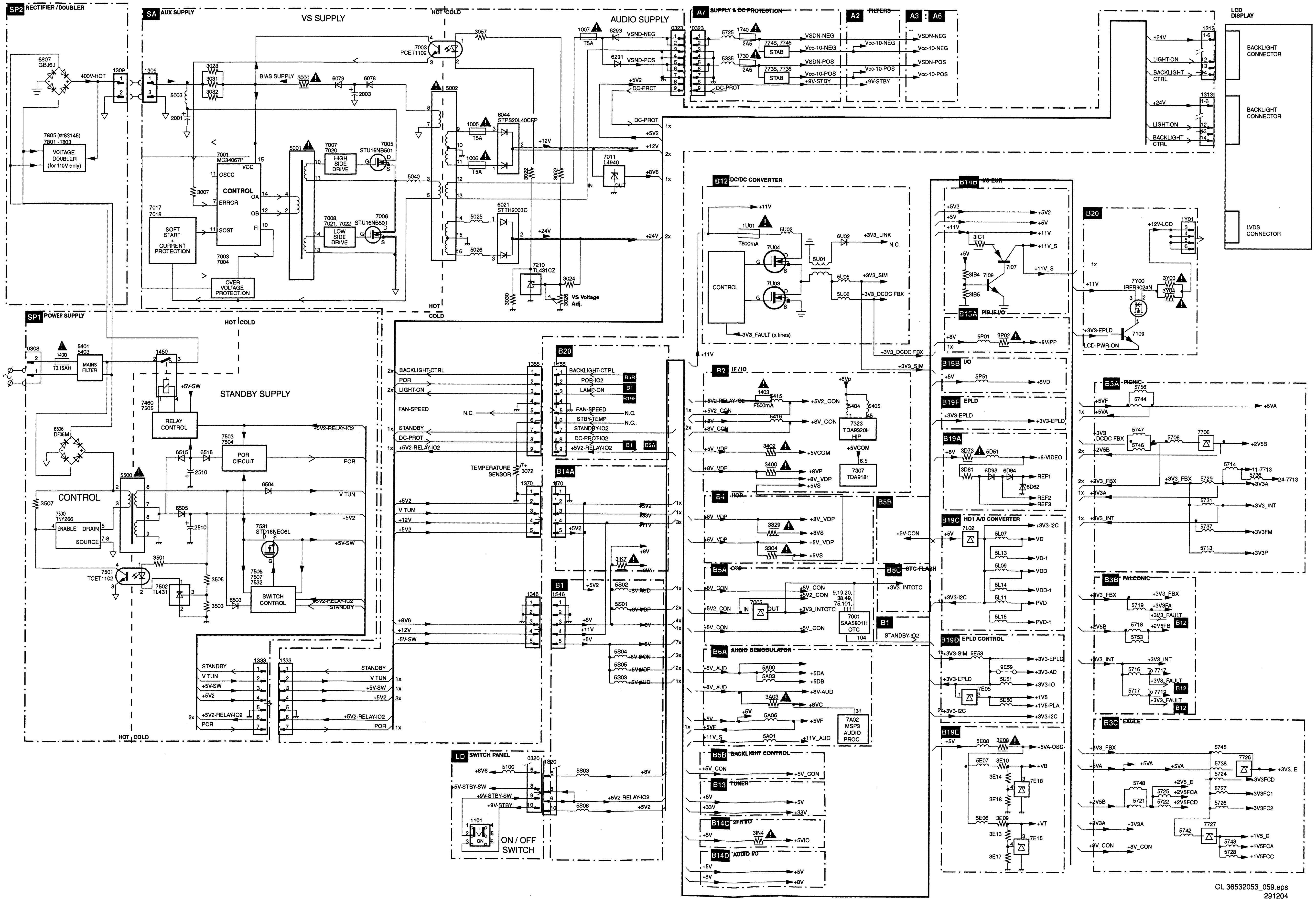
291003

Block Diagram Supply and Supply Lines



SP2 RECTIFIER / DOUBLER
SA AUX SUPPLY
VS SUPPLY
HOT COLD
AUDIO SUPPLY
A7 SUPPLY & DC PROTECTION
A2 FILTERS
A3 A6
LCD DISPLAY
BACKLIGHT CONNECTOR
BACKLIGHT CONNECTOR
LVDS CONNECTOR
VOLTAGE DOUBLER (for 110V only)
400V-HOT
BIAS SUPPLY
7001 MC34067P
CONTROL
SOFT START + CURRENT PROTECTION
OVER VOLTAGE PROTECTION
HIGH SIDE DRIVE
LOW SIDE DRIVE
VS Voltage Adj.
VSND-NEG
VSND-POS
VSDN-NEG
VSDN-POS
Vcc-10-NEG
Vcc-10-POS
+9V-STBY
DC-PROT
STAB
+24V
LIGHT-ON
BACKLIGHT CTRL
+5V2
+12V
+8V6
SP1 POWER SUPPLY
MAINS FILTER
STANDBY SUPPLY
RELAY CONTROL
POR CIRCUIT
CONTROL
SWITCH CONTROL
+5V2-RELAY-IO2
POR
V TUN
+5V-SW
STANDBY
B20
B14A
B1
B12 DC/DC CONVERTER
B2 IF / IO
B4 HOP
B5A OTC
B5B
B5C OTC FLASH
B6A AUDIO DEMODULATOR
B8B BACKLIGHT CONTROL
B13 TUNER
B14C 2FH I/O
B14D AUDIO I/O
B14B VO EUR
B15A PIP IF I/O
B15B I/O
B19F EPLD
B19A
B19C HD1 A/D CONVERTER
B19D EPLD CONTROL
B19E
B3A PICNIC
B3B PALCONIC
B3C EAGLE
LD SWITCH PANEL
ON / OFF SWITCH
TEMPERATURE SENSOR
FAN-SPEED
N.C.

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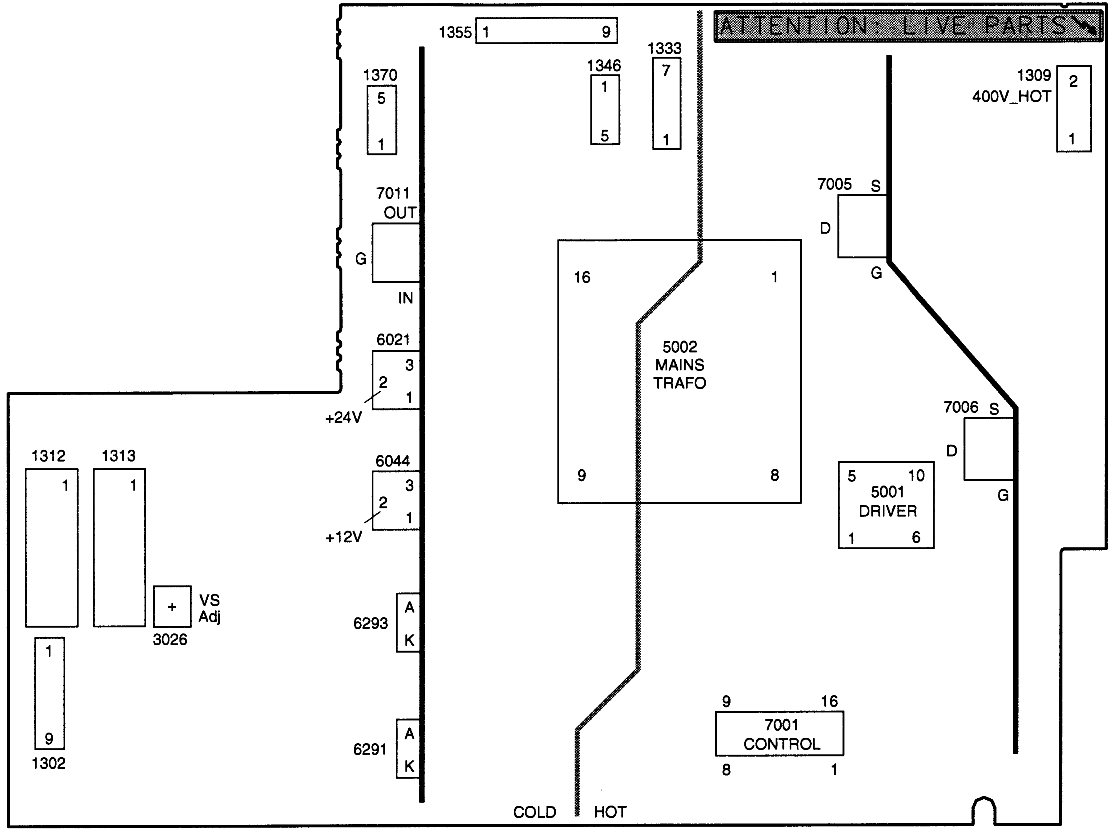
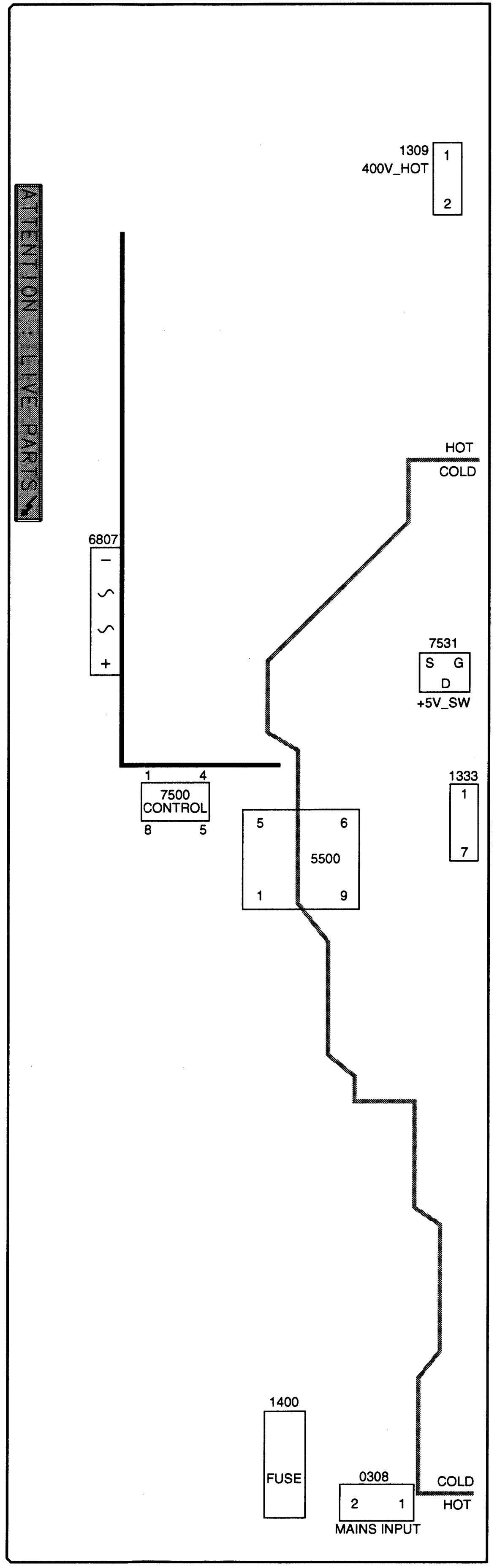
291204

Testpoint Overview Aux Supply and Power Supply

SA AUX SUPPLY (TRACK SIDE VIEW)


1355 1 9
ATTENTION: LIVE PARTS
1346 1 5
1333 7 1
1370 5 1
1309 400V_HOT 2 1
7011 OUT G IN
7005 S D G
16 1
5002 MAINS TRAFO
9 8
6021 3 2 1
+24V
6044 3 2 1
+12V
7006 S D G
5 10
5001 DRIVER
1 6
1312 1
1313 1
+ VS Adj
3026
6293 A K
1 9
1302
6291 A K
9 16
7001 CONTROL
8 1
COLD HOT

SP POWER SUPPLY (TRACK SIDE VIEW)


ATTENTION: LIVE PARTS
1309 400V_HOT 1 2
HOT COLD
6807 − ∼ ∼ +
7531 S G D
+5V_SW
1 4
7500 CONTROL
8 5
1333 1 7
5 6
5500
1 9
1400 FUSE
0308 2 1
MAINS INPUT
COLD HOT

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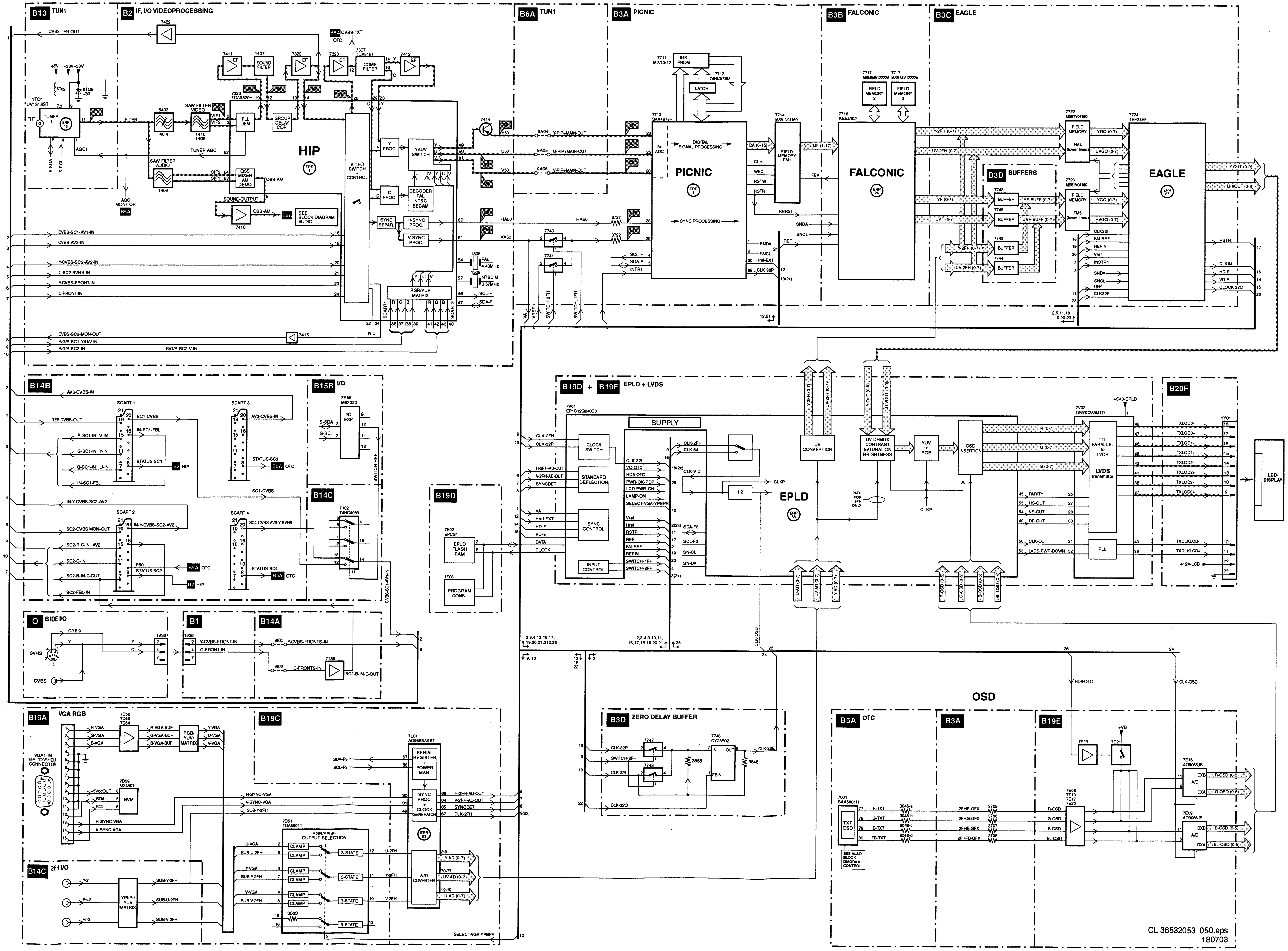
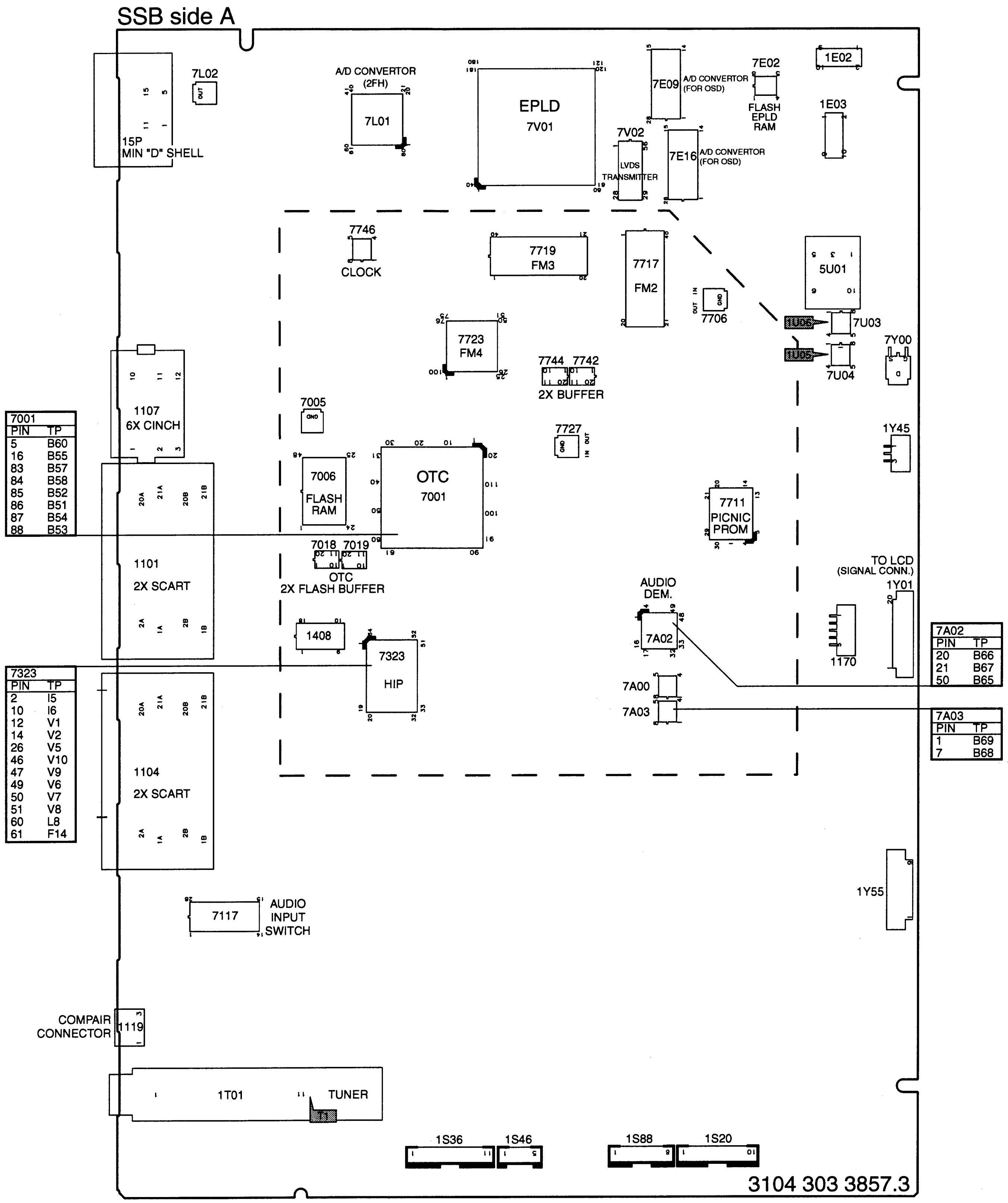
180703

Block Diagram Video

VIDEO


B13 TUN1
B2 IF, I/O VIDEOPROCESSING
B6A TUN1
B3A PICNIC
B3B FALCONIC
B3C EAGLE
B3D BUFFERS
TUNER
UV1318ST
HIP
VIDEO SWITCH + CONTROL
SAW FILTER VIDEO
SAW FILTER AUDIO
PLL DEM
GROUP DELAY COR.
QSS MIXER AM DEMO
SOUND FILTER
COMB FILTER
Y PROC.
Y/U/V SWITCH
C PROC.
DECODER PAL NTSC SECAM
SYNC SEPAR.
H-SYNC PROC.
V-SYNC PROC.
RGB/YUV MATRIX
SEE BLOCK DIAGRAM AUDIO
PAL 4.43MHz
NTSC M 3.57MHz
PICNIC
DIGITAL SIGNAL PROCESSING
SYNC PROCESSING
64K PROM
LATCH
FIELD MEMORY FM1
FIELD MEMORY 2
FIELD MEMORY 3
FALCONIC
BUFFER
FIELD MEMORY FM4
FIELD MEMORY FM5
EAGLE
B14B
SCART 1
SCART 2
SCART 3
SCART 4
B15B I/O
I/O EXP
B14C
O SIDE I/O
B1
B14A
SVHS
CVBS
B19D + B19F EPLD + LVDS
SUPPLY
CLOCK SWITCH
STANDARD DEFLECTION
SYNC CONTROL
INPUT CONTROL
EPLD
UV CONVERTION
UV DEMUX CONTRAST SATURATION BRIGHTNESS
YUV to RGB
OSD INSERTION
TTL PARALLEL to LVDS
LVDS transmitter
PLL
B20F
LCD-DISPLAY
B19D
EPLD FLASH RAM
PROGRAM CONN.
B19A VGA RGB
VGA1 IN 15P "D"SHELL CONNECTOR
RGB/YUV/MATRIX
NVM
B19C
SERIAL REGISTER + POWER MAN
SYNC PROC + CLOCK GENERATOR
A/D COVERTER
RGB/YPbPr OUTPUT SELECTION
CLAMP
3-STATE
B14C 2FH I/O
YPbPr/YUV MATRIX
B3D ZERO DELAY BUFFER
OSD
B5A OTC
B3A
B19E
TXT OSD
SEE ALSO BLOCK DIAGRAM CONTROL
A/D
CL 36532053_050.eps
180703

Testpoint Overview Small Signal Board

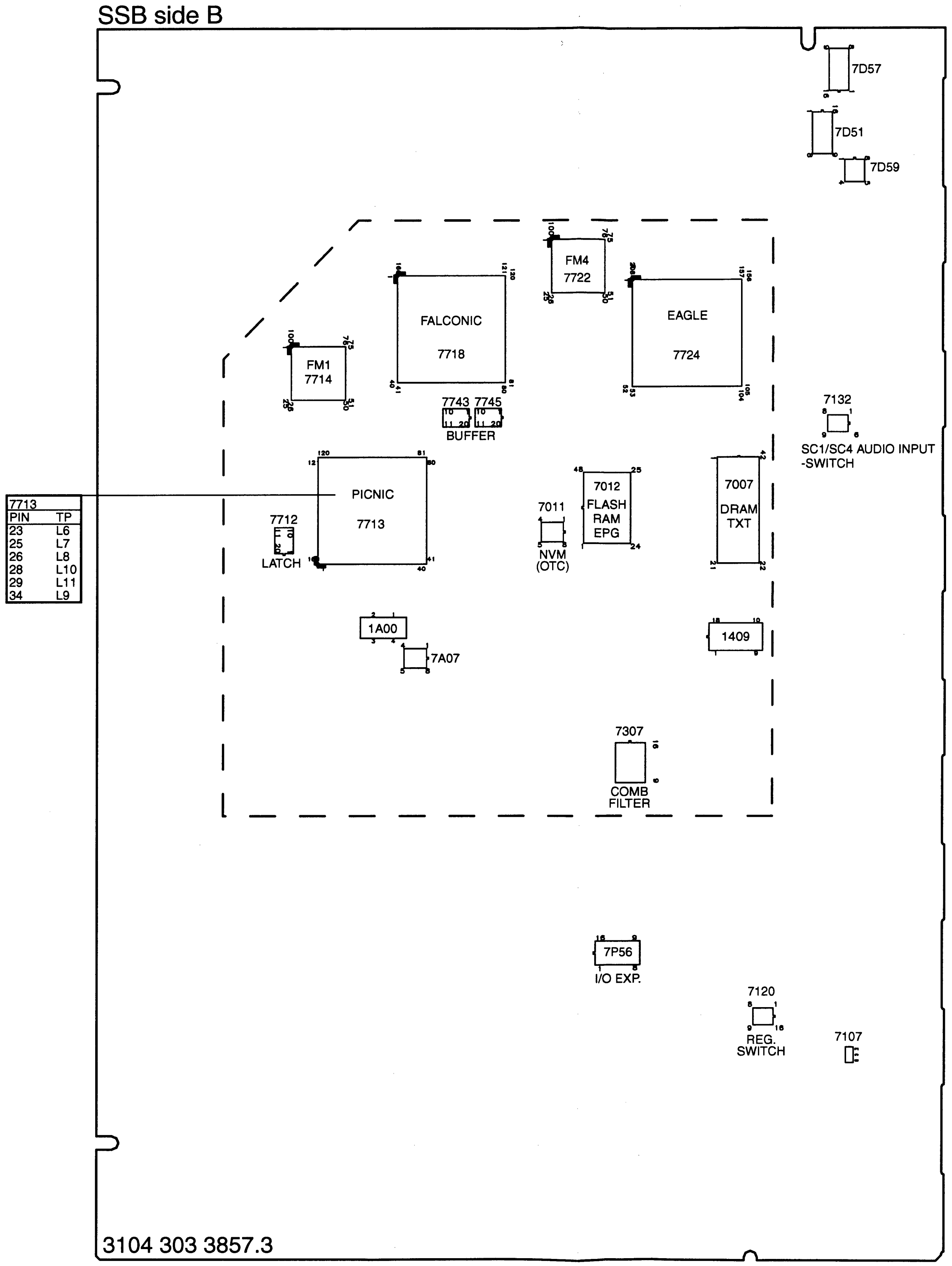

SSB side A
7L02
15P
MIN "D" SHELL
A/D CONVERTOR (2FH)
7L01
EPLD
7V01
7E09
A/D CONVERTOR (FOR OSD)
7E02
FLASH EPLD RAM
1E02
1E03
7V02
LVDS TRANSMITTER
7E16
A/D CONVERTOR (FOR OSD)
7746
CLOCK
7719 FM3
7717 FM2
7706
5U01
1U06
7U03
1U05
7U04
7Y00
7723 FM4
7744 7742
2X BUFFER
1107
6X CINCH
7005
7727
1Y45
7006 FLASH RAM
OTC 7001
7711 PICNIC PROM
7018 7019
OTC 2X FLASH BUFFER
1101
2X SCART
AUDIO DEM.
TO LCD (SIGNAL CONN.)
1Y01
7A02
1170
1408
7323
HIP
7A00
7A03
1104
2X SCART
1Y55
7117
AUDIO INPUT SWITCH
COMPAIR CONNECTOR
1119
1T01
TUNER
T1
1S36
1S46
1S88
1S20
3104 303 3857.3

7001	
PIN	TP
5	B60
16	B55
83	B57
84	B58
85	B52
86	B51
87	B54
88	B53

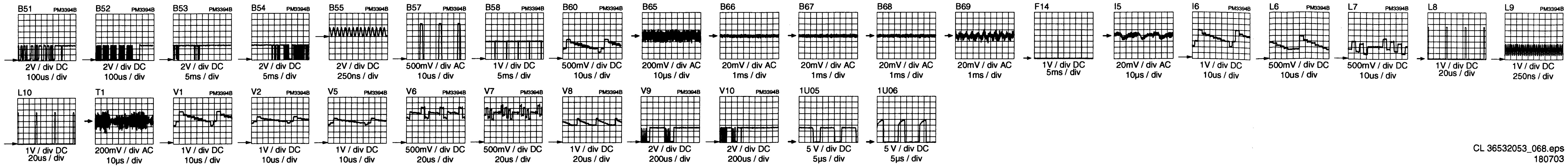
7323	
PIN	TP
2	I5
10	I6
12	V1
14	V2
26	V5
46	V10
47	V9
49	V6
50	V7
51	V8
60	L8
61	F14

7A02	
PIN	TP
20	B66
21	B67
50	B65

7A03	
PIN	TP
1	B69
7	B68


SSB side B
7D57
7D51
7D59
FM4
7722
FALCONIC
7718
EAGLE
7724
FM1
7714
7743 7745
BUFFER
7132
SC1/SC4 AUDIO INPUT -SWITCH
PICNIC
7713
7712
LATCH
7011
NVM (OTC)
7012
FLASH RAM EPG
7007
DRAM TXT
1A00
7A07
1409
7307
COMB FILTER
7P56
I/O EXP.
7120
REG. SWITCH
7107
3104 303 3857.3

7713	
PIN	TP
23	L6
25	L7
26	L8
28	L10
29	L11
34	L9



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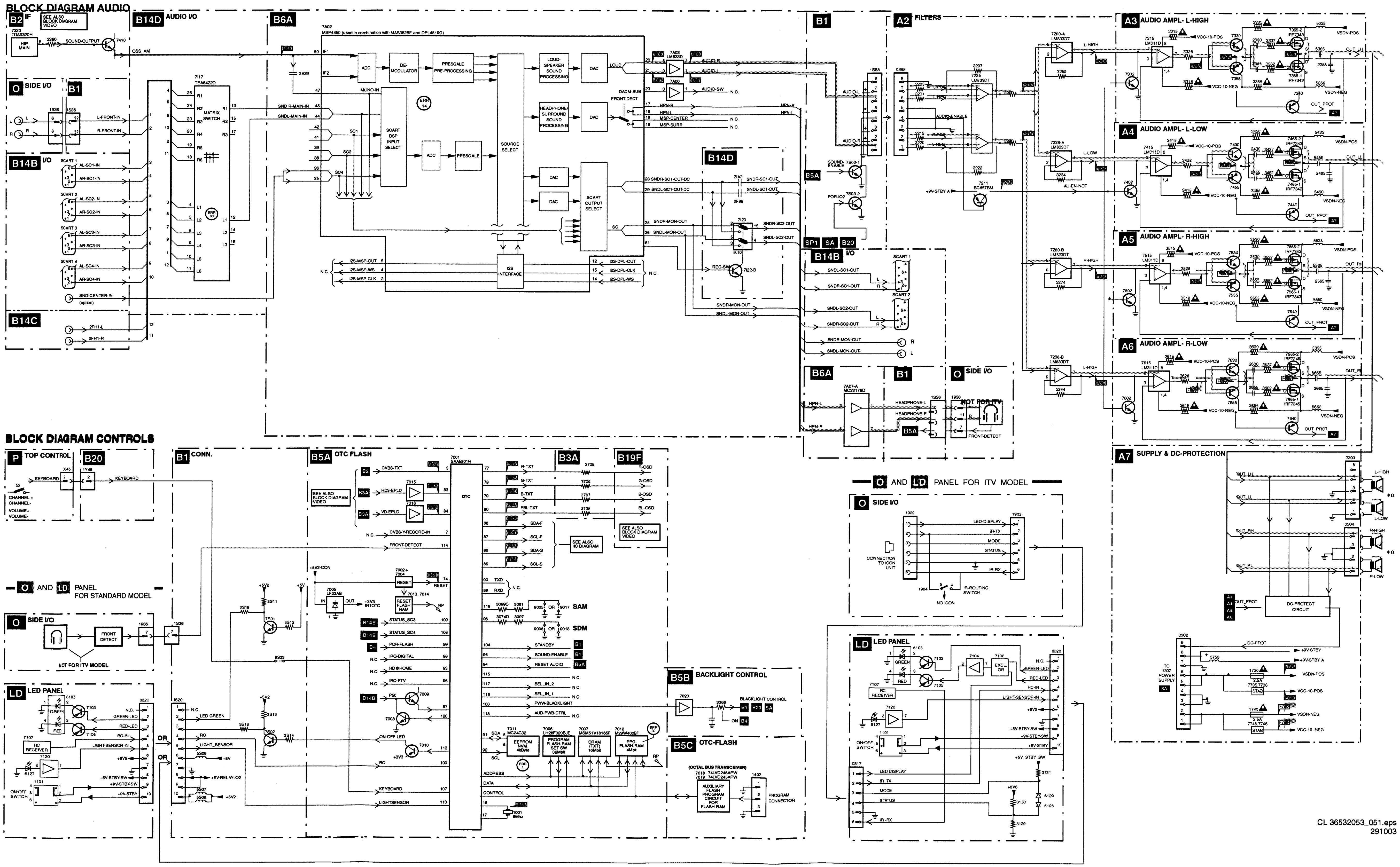
180703

Block Diagram Audio and Control


BLOCK DIAGRAM AUDIO
B2 IF
SEE ALSO BLOCK DIAGRAM VIDEO
7323 TDA9320H
HIP MAIN
SOUND-OUTPUT
B14D AUDIO I/O
QSS_AM
O SIDE I/O
B1
L-FRONT-IN
R-FRONT-IN
B14B I/O
SCART 1
AL-SC1-IN
AR-SC1-IN
SCART 2
AL-SC2-IN
AR-SC2-IN
SCART 3
AL-SC3-IN
AR-SC3-IN
SCART 4
AL-SC4-IN
AR-SC4-IN
SND-CENTER-IN (option)
B14C
2FH1-L
2FH1-R
7117 TEA6422D
MATRIX SWITCH
B6A
7A02 MSP4450 (used in combination with MAS3528E and DPL4519G)
IF1
IF2
SND R-MAIN-IN
SNDL-MAIN-IN
MONO-IN
SC1
SC3
SC4
ADC
DE-MODULATOR
PRESCALE PRE-PROCESSING
SCART DSP INPUT SELECT
PRESCALE
SOURCE SELECT
LOUD-SPEAKER SOUND PROCESSING
HEADPHONE/ SURROUND SOUND PROCESSING
DAC
LOUD
DACM-SUB
FRONT-DECT
SCART OUTPUT SELECT
I2S INTERFACE
I2S-MSP-OUT
I2S-MSP-WS
I2S-MSP-CLK
I2S-DPL-OUT
I2S-DPL-CLK
I2S-DPL-WS
N.C.
AUDIO-R
AUDIO-L
AUDIO-SW
HPN-R
HPN-L
MSP-CENTER
MSP-SURR
SNDR-SC1-OUT-DC
SNDL-SC1-OUT-DC
SNDR-MON-OUT
SNDL-MON-OUT
B14D
SNDR-SC1-OUT
SNDL-SC1-OUT
SNDR-SC2-OUT
SNDL-SC2-OUT
REG-SW
B1
B5A
SOUND-ENABLE
POR-ICS
SP1 SA B20
B14B I/O
SNDL-SC1-OUT
SNDR-SC1-OUT
SCART 1
SCART 2
SNDL-SC2-OUT
SNDR-SC2-OUT
SNDR-MON-OUT
SNDL-MON-OUT
R
L
B6A
B1
O SIDE I/O
7A07-A MC33178D
HPN-L
HPN-R
HEADPHONE-L
HEADPHONE-R
NOT FOR ITV
FRONT-DETECT
B5A
A2 FILTERS
AUDIO-L
AUDIO-R
AUDIO-ENABLE
7225 LM833DT
+9V-STBY
7211 BC857BM
AU-EN-NOT
A3 AUDIO AMPL- L-HIGH
7260-A LM833DT
L-HIGH
7315 LM311D
VCC-10-POS
VCC-10-NEG
VSDN-POS
VSDN-NEG
OUT_LH
OUT_PROT
A4 AUDIO AMPL- L-LOW
7239-A LM833DT
L-LOW
7415 LM311D
OUT_LL
A5 AUDIO AMPL- R-HIGH
7260-B LM833DT
R-HIGH
7515 LM311D
OUT_RH
A6 AUDIO AMPL- R-LOW
7239-B LM833DT
7615 LM311D
OUT_RL
A7
A7 SUPPLY & DC-PROTECTION
L-HIGH
L-LOW
R-HIGH
R-LOW
8 Ω
DC-PROTECT CIRCUIT
DC-PROT
+9V-STBY
+9V-STBY A
VSDN-POS
VCC-10-POS
VSDN-NEG
VCC-10-NEG
TO 1302 POWER SUPPLY
SA
BLOCK DIAGRAM CONTROLS
P TOP CONTROL
B20
KEYBOARD
CHANNEL+
CHANNEL-
VOLUME+
VOLUME-
B1 CONN.
O AND LD PANEL FOR STANDARD MODEL
O SIDE I/O
FRONT DETECT
NOT FOR ITV MODEL
LD LED PANEL
GREEN
RED
N.C.
GREEN-LED
RED-LED
RC-IN
LIGHT-SENSOR-IN
+8V6
RC RECEIVER
ON/OFF SWITCH
+5V-STBY-SW
+9V-STBY-SW
+9V-STBY
OR
LED GREEN
RC
LIGHT_SENSOR
+5V-RELAY-IO2
+5V2
B5A OTC FLASH
7001 SAA5801H
OTC
CVBS-TXT
HD3-EPLD
VD-EPLD
SEE ALSO BLOCK DIAGRAM VIDEO
CVBS-Y-RECORD-IN
FRONT-DETECT
+5V2-CON
RESET
RESET FLASH RAM
7005 LF33AB
+3V3 INTOTC
STATUS_SC3
STATUS_SC4
POR-FLASH
IRQ-DIGITAL
HD@HOME
IRQ-FTV
ON-OFF-LED
KEYBOARD
LIGHTSENSOR
R-TXT
G-TXT
B-TXT
FBL-TXT
SDA-F
SCL-F
SDA-S
SCL-S
SEE ALSO IIC DIAGRAM
B3A
B19F
R-OSD
G-OSD
B-OSD
BL-OSD
SEE ALSO BLOCK DIAGRAM VIDEO
TXD
RXD
SAM
SDM
STANDBY
SOUND-ENABLE
RESET AUDIO
SEL_IN_2
SEL_IN_1
PWM-BACKLIGHT
AUD-PWB-CTRL
7011 M24C32 EEPROM NVM 4kByte
7006 LH28F320BJE PROGRAM FLASH-RAM SET SW 32Mbit
7007 MSM51V18165F DRAM (TXT) 16Mbit
7012 M29W400BT EPG-FLASH-RAM 4Mbit
ADDRESS
DATA
CONTROL
6MHz
B5B BACKLIGHT CONTROL
BACKLIGHT CONTROL
ON
B5C OTC-FLASH
(OCTAL BUS TRANSCEIVER) 7018 74LVC245APW 7019 74LVC245APW
AUXILIARY FLASH PROGRAM CIRCUIT FOR FLASH RAM
PROGRAM CONNECTOR
O AND LD PANEL FOR ITV MODEL
O SIDE I/O
CONNECTION TO ICON UNIT
LED-DISPLAY
IR-TX
MODE
STATUS
IR-RX
IR-ROUTING SWITCH
NO ICON
LD LED PANEL
EXCL. OR
+5V_STBY_SW
LED DISPLAY
IR_TX
MODE
STATUS
IR_RX

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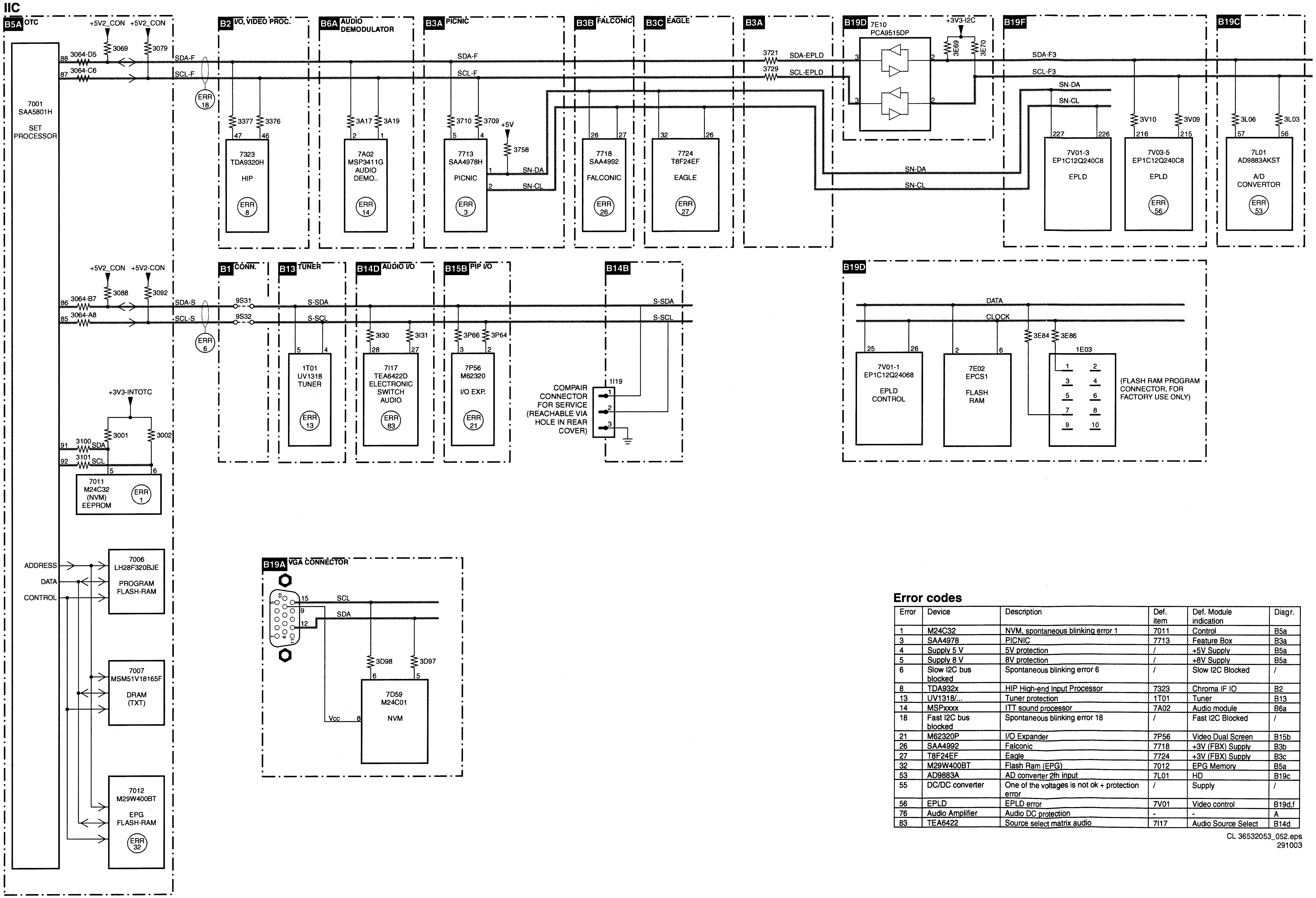
I2C IC's overview


IIC
B5A OTC
+5V2_CON +5V2_CON
3069
3079
88 3064-D5
87 3064-C6
SDA-F
SCL-F
ERR 18
7001
SAA5801H
SET PROCESSOR
+5V2_CON +5V2-CON
3088
3092
86 3064-B7
85 3064-A8
SDA-S
SCL-S
ERR 6
+3V3-INTOTC
3001
3002
91 3100 SDA
92 3101 SCL
5
6
7011
M24C32
(NVM)
EEPROM
ERR 1
ADDRESS
DATA
CONTROL
7006
LH28F320BJE
PROGRAM FLASH-RAM
7007
MSM51V18165F
DRAM
(TXT)
7012
M29W400BT
EPG FLASH-RAM
ERR 32
B2 I/O, VIDEO PROC.
3377 3376
47 46
7323
TDA9320H
HIP
ERR 8
B6A AUDIO DEMODULATOR
3A17 3A19
2 1
7A02
MSP3411G
AUDIO DEMO..
ERR 14
B3A PICNIC
SDA-F
SCL-F
3710 3709
+5V
3758
5 4
7713
SAA4978H
PICNIC
ERR 3
1 SN-DA
2 SN-CL
B3B FALCONIC
26 27
7718
SAA4992
FALCONIC
ERR 26
B3C EAGLE
32 26
7724
T8F24EF
EAGLE
ERR 27
B3A
3721 SDA-EPLD
3729 SCL-EPLD
B19D 7E10
PCA9515DP
+3V3-I2C
3E69
3E70
3 2
3 2
SN-DA
SN-CL
B19F
SDA-F3
SCL-F3
SN-DA
SN-CL
227 226
7V01-3
EP1C12Q240C8
EPLD
3V10 3V09
216 215
7V03-5
EP1C12Q240C8
EPLD
ERR 56
B19C
3L06 3L03
57 56
7L01
AD9883AKST
A/D CONVERTOR
ERR 53
B1 CONN.
9S31
9S32
B13 TUNER
S-SDA
S-SCL
5 4
1T01
UV1318
TUNER
ERR 13
B14D AUDIO I/O
3130 3131
28 27
7I17
TEA6422D
ELECTRONIC SWITCH AUDIO
ERR 83
B15B PIP I/O
3P66 3P64
3 2
7P56
M62320
I/O EXP.
ERR 21
B14B
S-SDA
S-SCL
1I19
1
2
3
COMPAIR CONNECTOR FOR SERVICE (REACHABLE VIA HOLE IN REAR COVER)
B19D
DATA
CLOCK
25 26
7V01-1
EP1C12Q24068
EPLD CONTROL
2 6
7E02
EPCS1
FLASH RAM
3E84 3E86
1E03
1 2
3 4
5 6
7 8
9 10
(FLASH RAM PROGRAM CONNECTOR, FOR FACTORY USE ONLY)
B19A VGA CONNECTOR
15 SCL
9
12 SDA
3D98 3D97
6 5
7D59
M24C01
NVM
Vcc 8

Error codes

Error	Device	Description	Def. item	Def. Module indication	Diagr.
1	M24C32	NVM, spontaneous blinking error 1	7011	Control	B5a
3	SAA4978	PICNIC	7713	Feature Box	B3a
4	Supply 5 V	5V protection	/	+5V Supply	B5a
5	Supply 8 V	8V protection	/	+8V Supply	B5a
6	Slow I2C bus blocked	Spontaneous blinking error 6	/	Slow I2C Blocked	/
8	TDA932x	HIP High-end Input Processor	7323	Chroma IF IO	B2
13	UV1318/...	Tuner protection	1T01	Tuner	B13
14	MSPxxxx	ITT sound processor	7A02	Audio module	B6a
18	Fast I2C bus blocked	Spontaneous blinking error 18	/	Fast I2C Blocked	/
21	M62320P	I/O Expander	7P56	Video Dual Screen	B15b
26	SAA4992	Falconic	7718	+3V (FBX) Supply	B3b
27	T8F24EF	Eagle	7724	+3V (FBX) Supply	B3c
32	M29W400BT	Flash Ram (EPG)	7012	EPG Memory	B5a
53	AD9883A	AD converter 2fh input	7L01	HD	B19c
55	DC/DC converter	One of the voltages is not ok + protection error	/	Supply	/
56	EPLD	EPLD error	7V01	Video control	B19d,f
76	Audio Amplifier	Audio DC protection	-	-	A
83	TEA6422	Source select matrix audio	7I17	Audio Source Select	B14d

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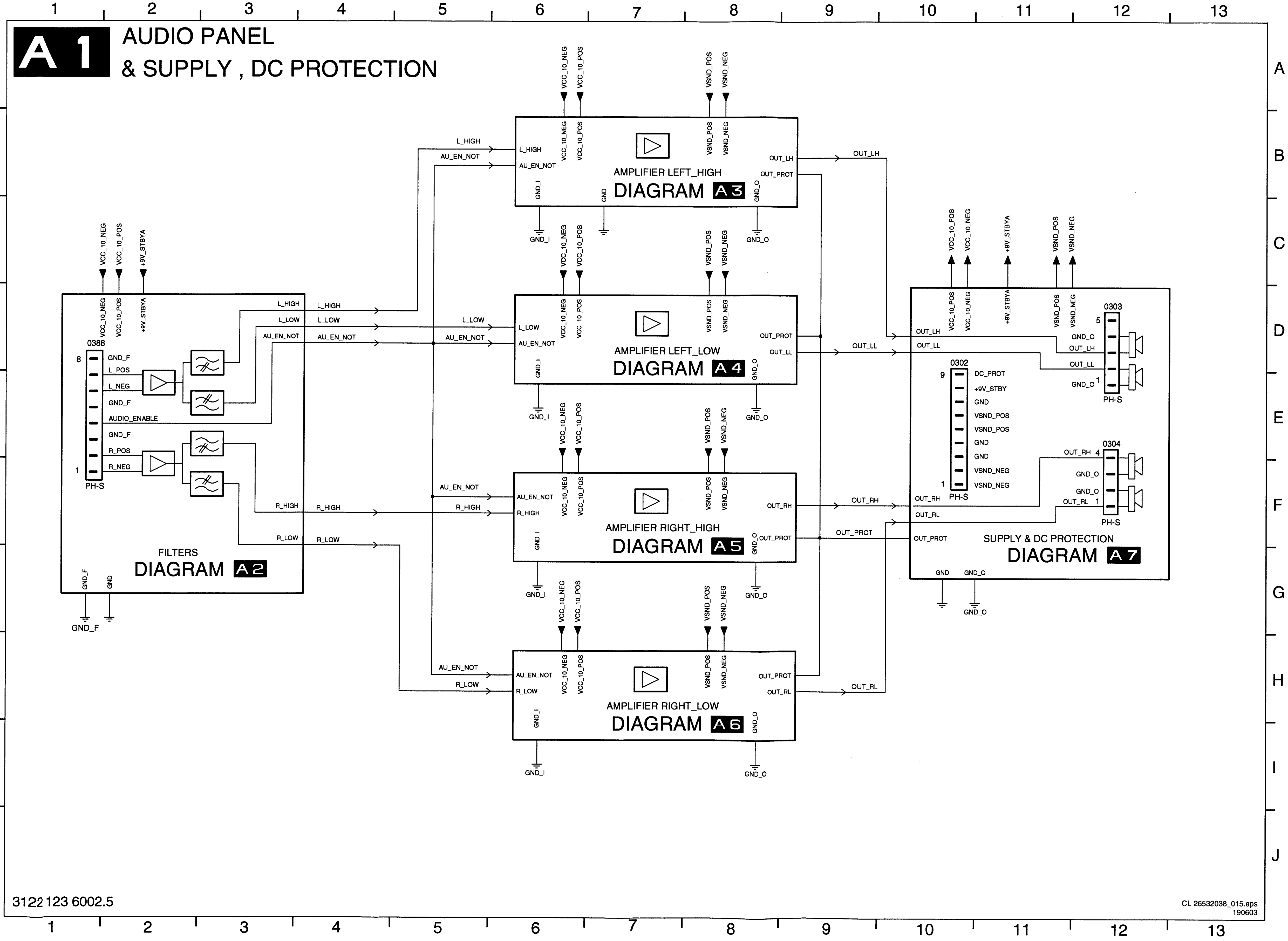
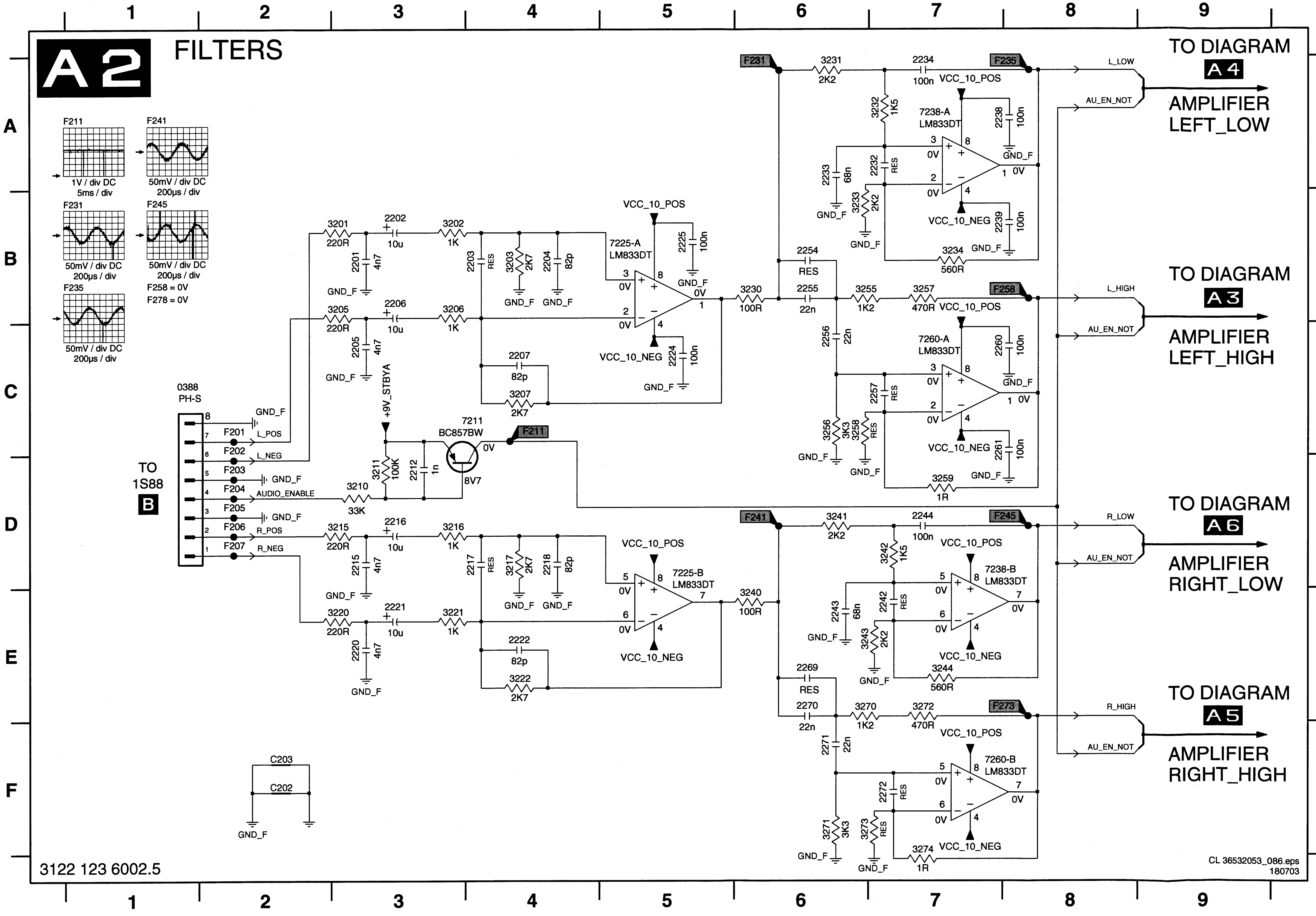
7. Circuit Diagrams and PWB Layouts

Audio Panel and Supply, DC Protection


A 1
AUDIO PANEL
& SUPPLY , DC PROTECTION
FILTERS
DIAGRAM A2
0388
PH-S
GND_F
L_POS
L_NEG
AUDIO_ENABLE
R_POS
R_NEG
GND
VCC_10_NEG
VCC_10_POS
+9V_STBYA
L_HIGH
L_LOW
AU_EN_NOT
R_HIGH
R_LOW
AMPLIFIER LEFT_HIGH
DIAGRAM A3
AMPLIFIER LEFT_LOW
DIAGRAM A4
AMPLIFIER RIGHT_HIGH
DIAGRAM A5
AMPLIFIER RIGHT_LOW
DIAGRAM A6
VSND_POS
VSND_NEG
GND_I
GND_O
OUT_LH
OUT_LL
OUT_RH
OUT_RL
OUT_PROT
SUPPLY & DC PROTECTION
DIAGRAM A7
0302
DC_PROT
+9V_STBY
0303
0304
A B C D E F G H I J
1 2 3 4 5 6 7 8 9 10 11 12 13
3122 123 6002.5
CL 26532038_015.eps
190603

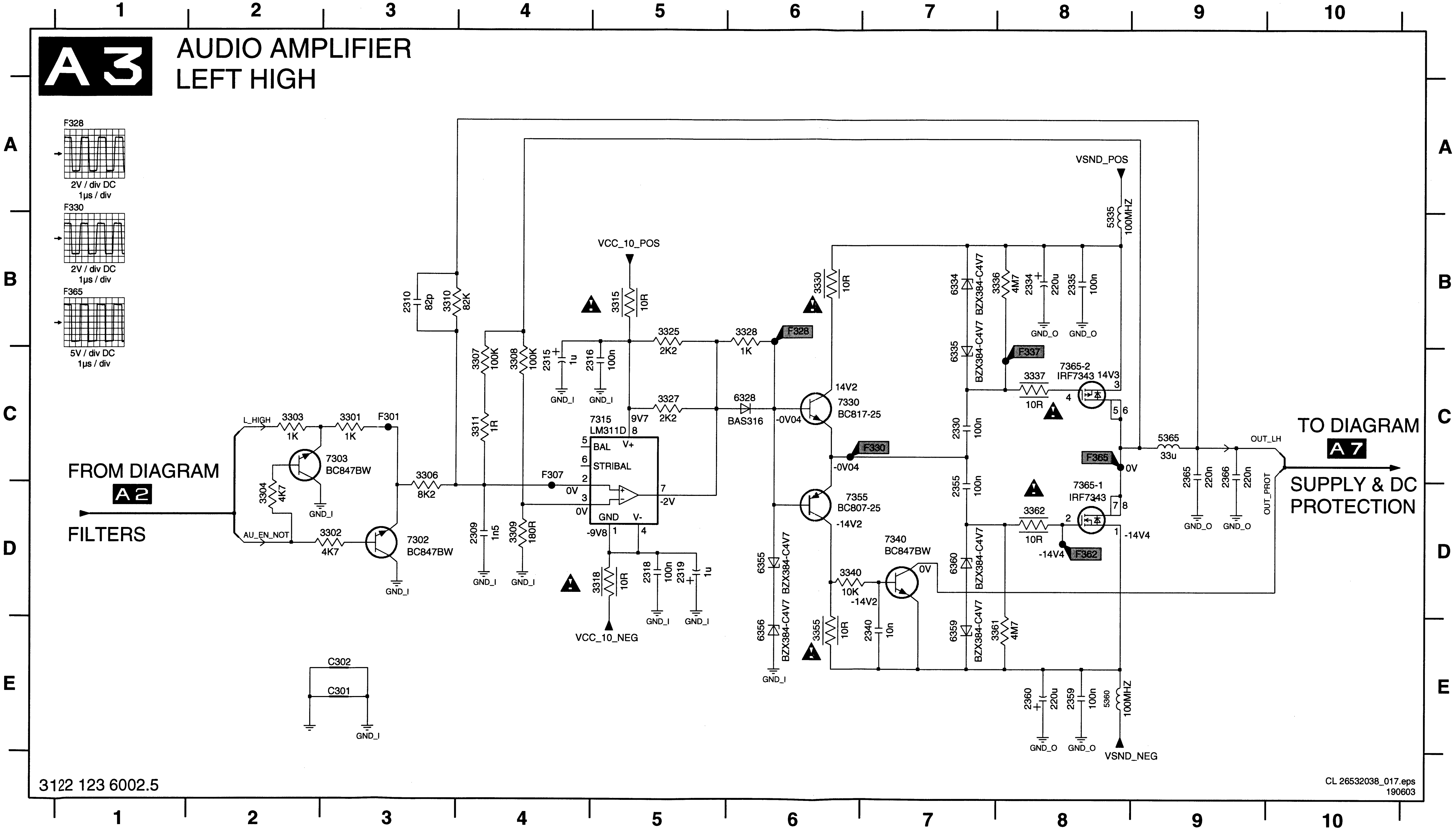
Filters


A2
FILTERS
F211
1V / div DC
5ms / div
F241
50mV / div DC
200µs / div
F231
50mV / div DC
200µs / div
F245
50mV / div DC
200µs / div
F235
50mV / div DC
200µs / div
F258 = 0V
F278 = 0V
0388
PH-S
TO
1S88
B
F201 L_POS
F202 L_NEG
F203 GND_F
F204 AUDIO_ENABLE
F205 GND_F
F206 R_POS
F207 R_NEG
3201 220R
2201 4n7
2202 10u
3202 1K
2203 RES
3203 2K7
2204 82p
3205 220R
2205 4n7
2206 10u
3206 1K
2207 82p
3207 2K7
7225-A LM833DT
VCC_10_POS
VCC_10_NEG
2225 100n
2224 100n
+9V_STBYA
3211 100K
2212 1n
3210 33K
7211 BC857BW
F211
0V
8V7
3215 220R
2215 4n7
2216 10u
3216 1K
2217 RES
3217 2K7
2218 82p
3220 220R
2220 4n7
2221 10u
3221 1K
2222 82p
3222 2K7
7225-B LM833DT
3230 100R
3240 100R
F231
3231 2K2
2234 100n
F235
3232 1K5
7238-A LM833DT
2238 100n
2233 68n
2232 RES
3233 2K2
2239 100n
3234 560R
2254 RES
2255 22n
3255 1K2
3257 470R
F258
2256 22n
7260-A LM833DT
2260 100n
2257 RES
3256 3K3
3258 RES
2261 100n
3259 1R
F241
3241 2K2
2244 100n
F245
3242 1K5
7238-B LM833DT
2243 68n
2242 RES
3243 2K2
3244 560R
2269 RES
2270 22n
3270 1K2
3272 470R
F273
2271 22n
7260-B LM833DT
2272 RES
3271 3K3
3273 RES
3274 1R
GND_F
0V
L_LOW
AU_EN_NOT
TO DIAGRAM A4 AMPLIFIER LEFT_LOW
L_HIGH
TO DIAGRAM A3 AMPLIFIER LEFT_HIGH
R_LOW
TO DIAGRAM A6 AMPLIFIER RIGHT_LOW
R_HIGH
TO DIAGRAM A5 AMPLIFIER RIGHT_HIGH
C203
C202
3122 123 6002.5
CL 36532053_086.eps
180703
1 2 3 4 5 6 7 8 9
A B C D E F

0388	C1
2201	B3
2202	B3
2203	B4
2204	B4
2205	C3
2206	B3
2207	C4
2212	D3
2215	D3
2216	D3
2217	D4
2218	D4
2220	E3
2221	E3
2222	E4
2224	C5
2225	B5
2232	A7
2233	A6
2234	A7
2238	A7
2239	B7
2242	E7
2243	E6
2244	D7
2254	B6
2255	B6
2256	C6
2257	C7
2260	C7
2261	C7
2269	E6
2270	E6
2271	F6
2272	F7
3201	B3
3202	B3
3203	B4
3205	B3
3206	B3
3207	C4
3210	D3
3211	D3
3215	D3
3216	D3
3217	D4
3220	E3
3221	E3
3222	E4
3230	B6
3231	A6
3232	A7
3233	B6
3234	B7
3240	E6
3241	D6
3242	D7
3243	E6
3244	E7
3255	B6
3256	C6
3257	B7
3258	C6
3259	D7
3270	E6
3271	F6
3272	E7
3273	F6
3274	F7
7211	C4
7225-A	B5
7225-B	D5
7238-A	A7
7238-B	D7
7260-A	C7
7260-B	F7
C202	F2
C203	F2
F201	C2
F202	C2
F203	D2
F204	D2
F205	D2
F206	D2
F207	D2
F211	C4
F231	A6
F235	A8
F241	D6
F245	D8
F258	B8
F273	E8

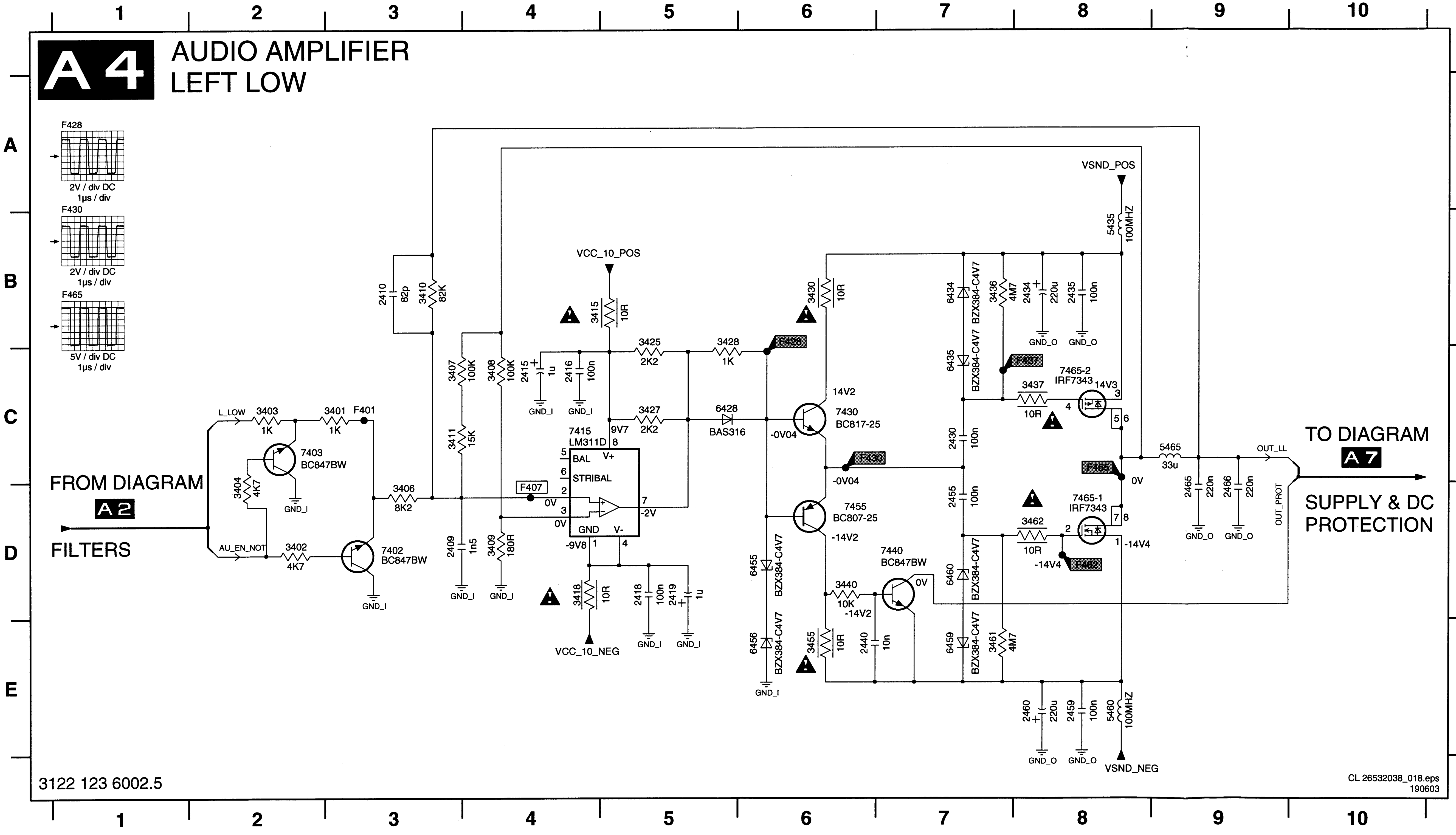
Audio Amplifier Left High

2309 D4
2310 B3
2315 C4
2316 C5
2318 D5
2319 D5
2330 C7
2334 B8
2335 B8
2340 E7
2355 D7
2359 E8
2360 E8
2365 C9
2366 C9
3301 C3
3302 D3
3303 C2
3304 D2
3306 C3
3307 C4
3308 C4
3309 D4
3310 B3
3311 C4
3315 B5
3318 D5
3325 B5
3327 C5
3328 B6
3330 B6
3336 B8
3337 C8
3340 D6
3355 E6
3361 E8
3362 D8
5335 B8
5360 E8
5365 C9
6328 C6
6334 B7
6335 C7
6355 D6
6356 E6
6359 E7
6360 D7
7302 D3
7303 C3
7315 C4
7330 C6
7340 D7
7355 D6
7365-1 D8
7365-2 C8
C301 E3
C302 E3
F301 C3
F307 C4
F328 B6
F330 C7
F337 C8
F362 D8
F365 C8


A3
AUDIO AMPLIFIER
LEFT HIGH
F328
2V / div DC
1μs / div
F330
2V / div DC
1μs / div
F365
5V / div DC
1μs / div
FROM DIAGRAM
A2
FILTERS
L_HIGH
AU_EN_NOT
3303 1K
3301 1K
F301
7303 BC847BW
3304 4K7
GND_I
3302 4K7
7302 BC847BW
3306 8K2
2310 82p
3310 82K
3307 100K
3308 100K
3311 1R
2309 1n5
3309 180R
VCC_10_POS
3315 10R
2315 1u
2316 100n
3325 2K2
3327 2K2
F307
7315 LM311D
BAL
STRIBAL
V+
GND
V-
9V7
0V
-2V
-9V8
3318 10R
2318 100n
2319 1u
VCC_10_NEG
3328 1K
F328
6328 BAS316
-0V04
3330 10R
7330 BC817-25
14V2
F330
7355 BC807-25
-14V2
7340 BC847BW
3340 10K
3355 10R
2340 10n
6355 BZX384-C4V7
6356 BZX384-C4V7
6334 BZX384-C4V7
6335 BZX384-C4V7
6359 BZX384-C4V7
6360 BZX384-C4V7
2330 100n
2355 100n
3336 4M7
2334 220u
2335 100n
GND_O
VSND_POS
5335 100MHZ
F337
3337 10R
7365-2 IRF7343
14V3
F365
0V
7365-1 IRF7343
3362 10R
-14V4
F362
3361 4M7
2360 220u
2359 100n
5360 100MHZ
VSND_NEG
5365 33u
2365 220n
2366 220n
OUT_LH
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC
PROTECTION
C302
C301
3122 123 6002.5
CL 26532038_017.eps
190603

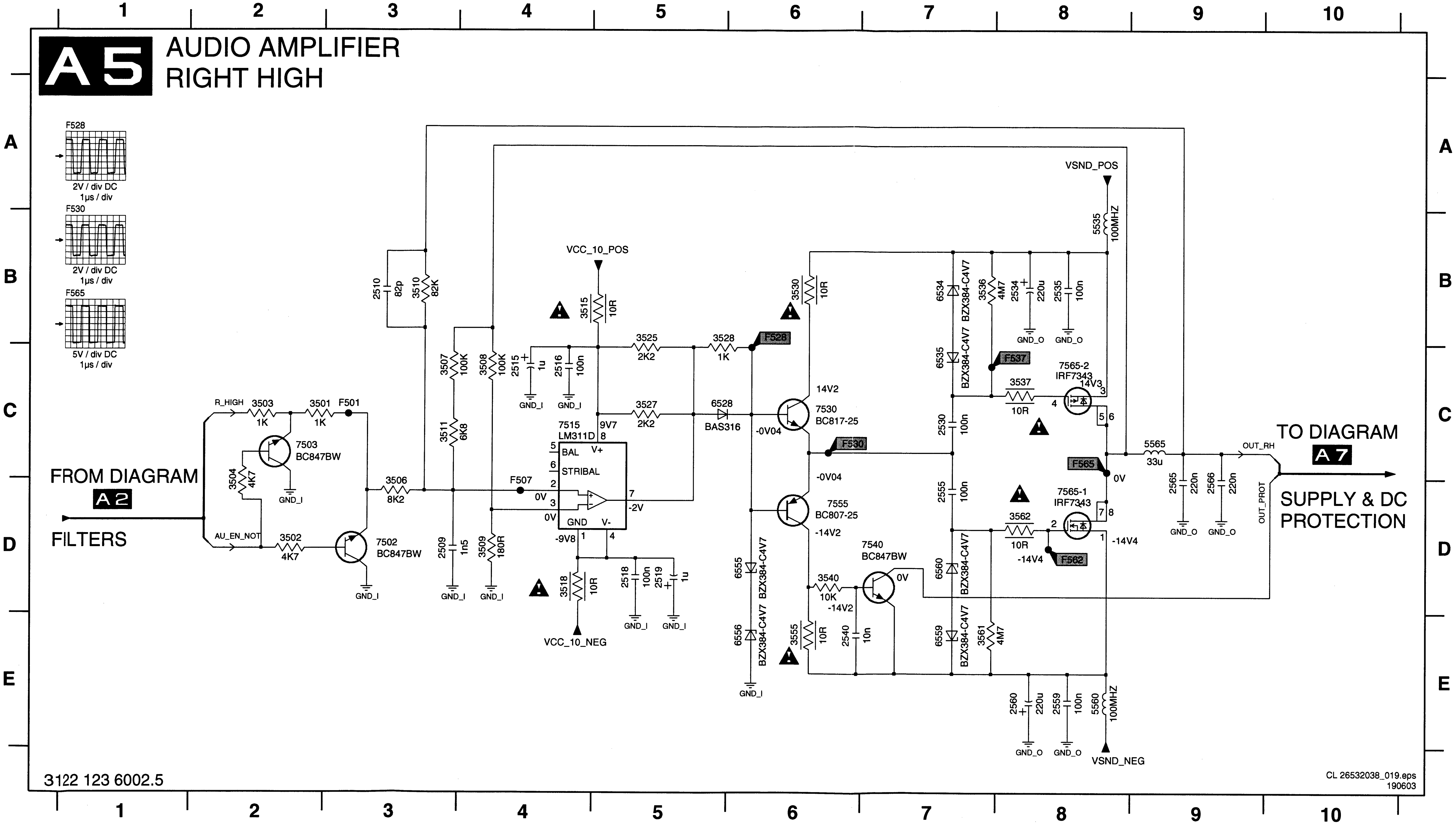
Audio Amplifier Left Low

2409	D3
2410	B3
2415	C4
2416	C4
2418	D5
2419	D5
2430	C7
2434	B8
2435	B8
2440	E6
2455	D7
2459	E8
2460	E8
2465	D9
2466	D9
3401	C3
3402	D2
3403	C2
3404	D2
3406	C3
3407	C3
3408	C4
3409	D4
3410	B3
3411	C3
3415	B4
3418	D4
3425	B5
3427	C5
3428	B5
3430	B6
3436	B7
3437	C8
3440	D6
3455	E6
3461	E7
3462	D8
5435	B8
5460	E8
5465	C9
6428	C5
6434	B7
6435	C7
6455	D6
6456	E6
6459	E7
6460	D7
7402	D3
7403	C2
7415	C4
7430	C6
7440	D7
7455	D6
7465-1	D8
7465-2	C8
F401	C3
F407	D4
F428	B6
F430	C6
F437	C8
F462	D8
F465	C8


A4 AUDIO AMPLIFIER LEFT LOW
F428
2V / div DC
1µs / div
F430
2V / div DC
1µs / div
F465
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
L_LOW
AU_EN_NOT
3403 1K
3401 1K
F401
7403 BC847BW
3404 4K7
GND_I
3402 4K7
7402 BC847BW
3406 8K2
2410 82p
3410 82K
3407 100K
3411 15K
3408 100K
2409 1n5
3409 180R
VCC_10_POS
3415 10R
2415 1u
2416 100n
3425 2K2
3427 2K2
3428 1K
F428
6428 BAS316
F407
7415 LM311D
BAL
STRIBAL
V+
GND
V-
9V7
0V
-2V
-9V8
3418 10R
2418 100n
2419 1u
VCC_10_NEG
3430 10R
14V2
7430 BC817-25
-0V04
F430
7455 BC807-25
-14V2
6455 BZX384-C4V7
6456 BZX384-C4V7
3440 10K
7440 BC847BW
2440 10n
3455 10R
VSND_POS
5435 100MHZ
6434 BZX384-C4V7
6435 BZX384-C4V7
3436 4M7
2434 220u
2435 100n
GND_O
F437
3437 10R
7465-2 IRF7343
14V3
2430 100n
2455 100n
3462 10R
7465-1 IRF7343
-14V4
F462
F465
6460 BZX384-C4V7
6459 BZX384-C4V7
3461 4M7
2460 220u
2459 100n
5460 100MHZ
VSND_NEG
5465 33u
2465 220n
2466 220n
OUT_LL
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC PROTECTION
3122 123 6002.5
CL 26532038_018.eps
190603

Audio Amplifier Right High

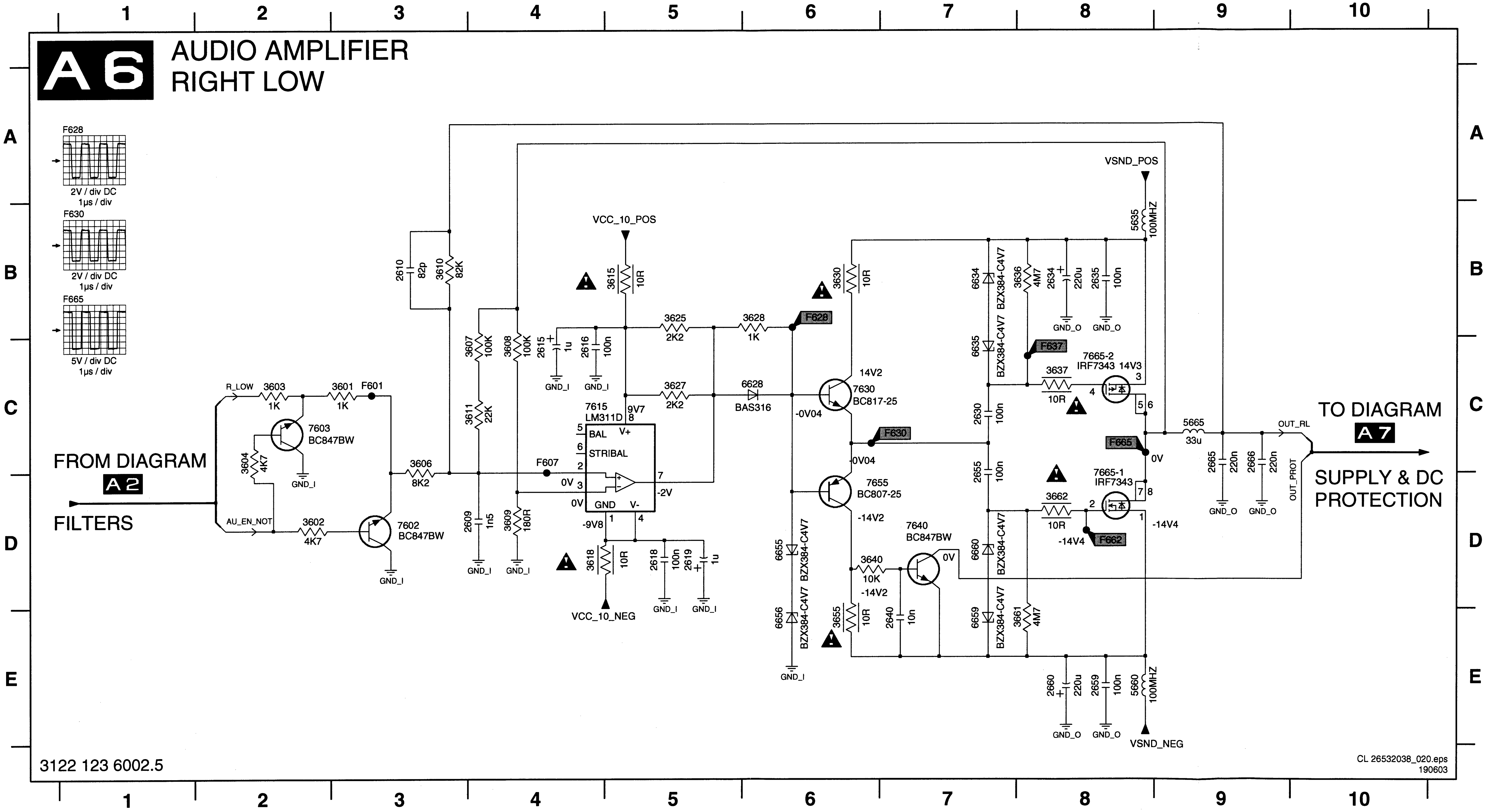
2509	D3
2510	B3
2515	C4
2516	C4
2518	D5
2519	D5
2530	C7
2534	B8
2535	B8
2540	E6
2555	D7
2559	E8
2560	E8
2565	D9
2566	D9
3501	C2
3502	D2
3503	C2
3504	D2
3506	D3
3507	C3
3508	C4
3509	D4
3510	B3
3511	C3
3515	B4
3518	D4
3525	B5
3527	C5
3528	B5
3530	B6
3536	B7
3537	C8
3540	D6
3555	E6
3561	E7
3562	D8
5535	B8
5560	E8
5565	C9
6528	C5
6534	B7
6535	C7
6555	D6
6556	E6
6559	E7
6560	D7
7502	D3
7503	C2
7515	C4
7530	C6
7540	D7
7555	D6
7565-1	D8
7565-2	C8
F501	C3
F507	D4
F528	B6
F530	C6
F537	C8
F562	D8
F565	C8



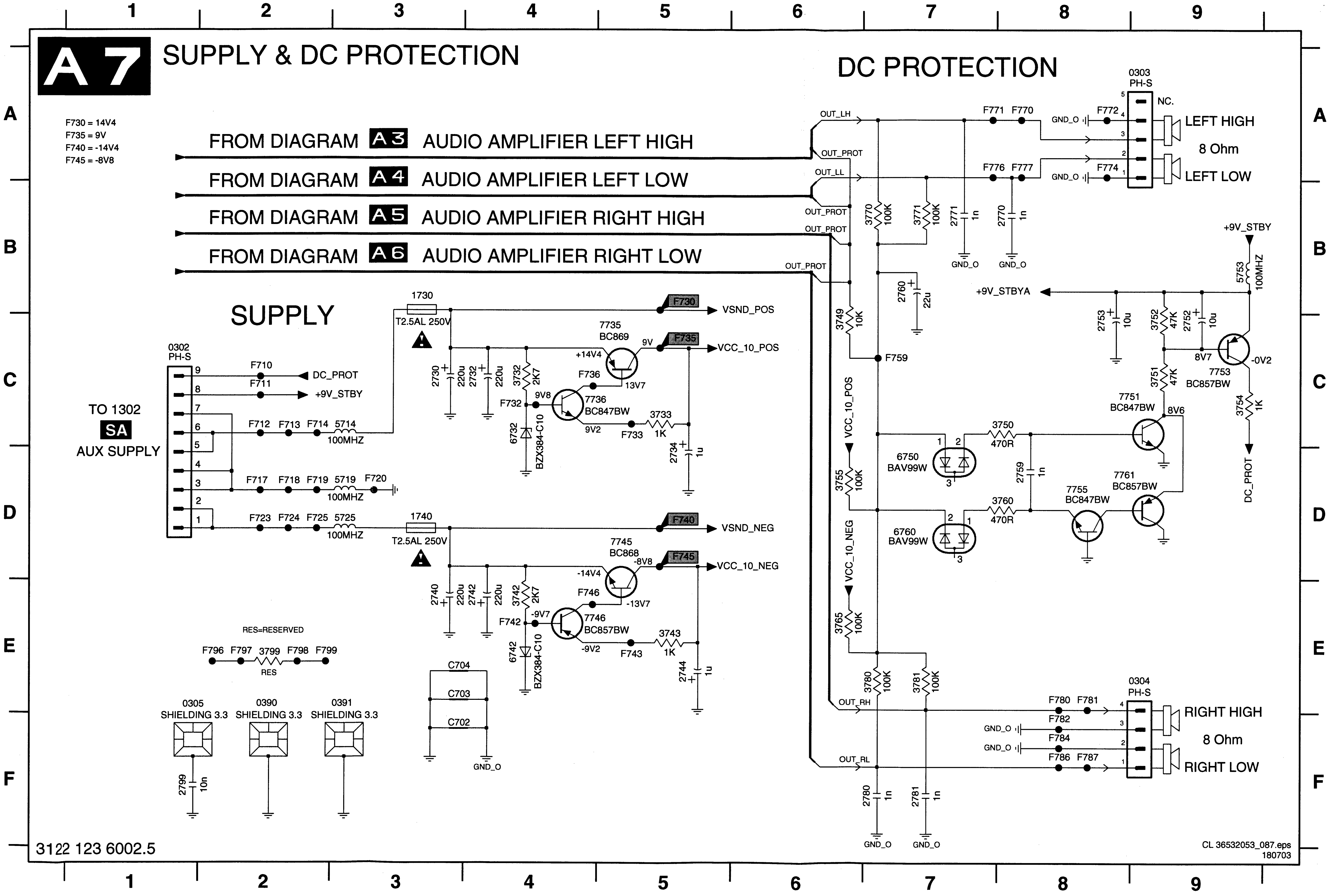
1 2 3 4 5 6 7 8 9 10
A B C D E
A5 AUDIO AMPLIFIER RIGHT HIGH
F528
2V / div DC
1µs / div
F530
2V / div DC
1µs / div
F565
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
R_HIGH
3503
1K
3501
1K
F501
7503
BC847BW
3504
4K7
GND_I
AU_EN_NOT
3502
4K7
7502
BC847BW
GND_I
3506
8K2
2510
82p
3510
82K
3507
100K
3511
6K8
2509
1n5
3508
100K
3509
180R
GND_I
2515
1u
2516
100n
VCC_10_POS
3515
10R
7515
LM311D
BAL
STRIBAL
V+
GND
V-
9V7
0V
-2V
-9V8
F507
3518
10R
VCC_10_NEG
2518
100n
2519
1u
3525
2K2
3527
2K2
3528
1K
F528
6528
BAS316
3530
10R
14V2
7530
BC817-25
-0V04
F530
7555
BC807-25
-14V2
6555
BZX384-C4V7
6556
BZX384-C4V7
GND_I
3540
10K
-14V2
2540
10n
3555
10R
7540
BC847BW
0V
6534
BZX384-C4V7
6535
BZX384-C4V7
3536
4M7
2534
220u
2535
100n
GND_O
F537
3537
10R
7565-2
IRF7343
14V3
2530
100n
2555
100n
F565
0V
7565-1
IRF7343
3562
10R
-14V4
F562
6560
BZX384-C4V7
6559
BZX384-C4V7
3561
4M7
VSND_POS
5535
100MHZ
5565
33u
2565
220n
2566
220n
GND_O
OUT_RH
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC PROTECTION
2560
220u
2559
100n
5560
100MHZ
VSND_NEG
3122 123 6002.5
CL 26532038_019.eps
190603

Audio Amplifier Right Low

2609	D4
2610	B3
2615	C4
2616	C4
2618	D5
2619	D5
2630	C7
2634	B8
2635	B8
2640	E7
2655	C7
2659	E8
2660	E8
2665	C9
2666	C9
3601	C3
3602	D2
3603	C2
3604	C2
3606	C3
3607	C4
3608	C4
3609	D4
3610	B3
3611	C4
3615	B5
3618	D4
3625	B5
3627	C5
3628	B6
3630	B6
3636	B8
3637	C8
3640	D6
3655	E6
3661	E8
3662	D8
5635	B8
5660	E8
5665	C9
6628	C6
6634	B7
6635	C7
6655	D6
6656	E6
6659	E7
6660	D7
7602	D3
7603	C2
7615	C4
7630	C6
7640	D7
7655	D6
7665-1	D8
7665-2	C8
F601	C3
F607	C4
F628	B6
F630	C7
F637	C8
F662	D8
F665	C8


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
A6
AUDIO AMPLIFIER
RIGHT LOW
F628
2V / div DC
1µs / div
F630
2V / div DC
1µs / div
F665
5V / div DC
1µs / div
FROM DIAGRAM
A2
FILTERS
R_LOW
3603
1K
3601
1K
F601
7603
BC847BW
3604
4K7
GND_I
AU_EN_NOT
3602
4K7
7602
BC847BW
GND_I
3606
8K2
2610
82p
3610
82K
3607
100K
3608
100K
3611
22K
2609
1n5
3609
180R
GND_I
GND_I
F607
VCC_10_POS
3615
10R
2615
1u
2616
100n
GND_I
GND_I
7615
LM311D
9V7
8
5
BAL
V+
6
STRIBAL
2
0V
3
7
-2V
0V
GND
V-
1
4
-9V8
3618
10R
VCC_10_NEG
2618
100n
2619
1u
GND_I
GND_I
3625
2K2
3627
2K2
3628
1K
6628
BAS316
F628
3630
10R
14V2
7630
BC817-25
-0V04
F630
-0V04
7655
BC807-25
-14V2
6655
BZX384-C4V7
6656
BZX384-C4V7
GND_I
3640
10K
-14V2
7640
BC847BW
0V
3655
10R
2640
10n
VSND_POS
5635
100MHZ
6634
BZX384-C4V7
6635
BZX384-C4V7
3636
4M7
2634
220u
2635
100n
GND_O
GND_O
F637
3637
10R
7665-2
IRF7343
14V3
3
4
5
6
2630
100n
2655
100n
F665
0V
7665-1
IRF7343
7
8
3662
10R
2
1
-14V4
-14V4
F662
6660
BZX384-C4V7
6659
BZX384-C4V7
3661
4M7
2660
220u
2659
100n
5660
100MHZ
GND_O
GND_O
VSND_NEG
5665
33u
2665
220n
2666
220n
GND_O
GND_O
OUT_RL
OUT_PROT
TO DIAGRAM
A7
SUPPLY & DC
PROTECTION
3122 123 6002.5
CL 26532038_020.eps
190603

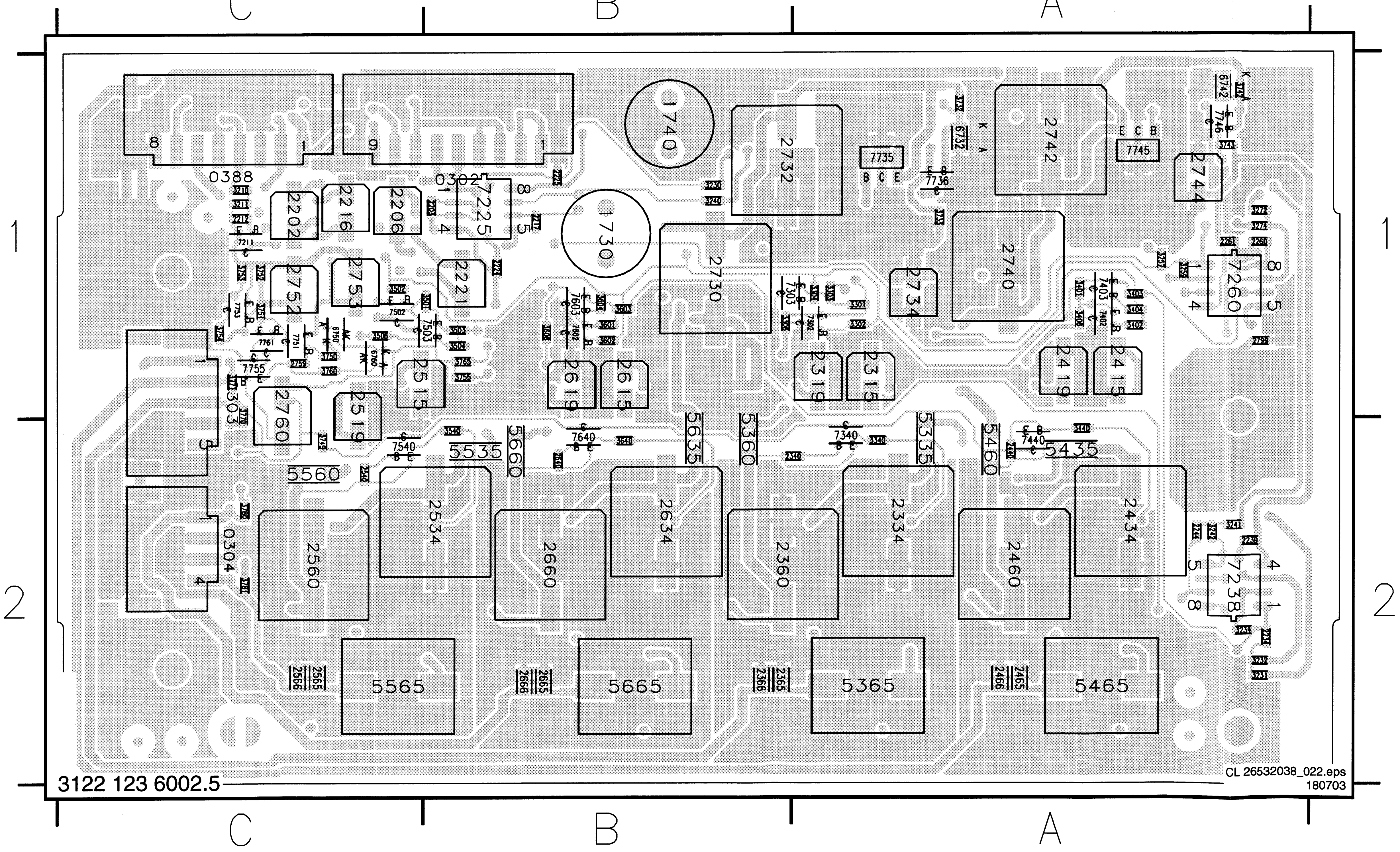
Supply & DC Protection


A 7
SUPPLY & DC PROTECTION
F730 = 14V4
F735 = 9V
F740 = -14V4
F745 = -8V8
FROM DIAGRAM A3 AUDIO AMPLIFIER LEFT HIGH
FROM DIAGRAM A4 AUDIO AMPLIFIER LEFT LOW
FROM DIAGRAM A5 AUDIO AMPLIFIER RIGHT HIGH
FROM DIAGRAM A6 AUDIO AMPLIFIER RIGHT LOW
SUPPLY
0302 PH-S
TO 1302
SA
AUX SUPPLY
DC_PROT
+9V_STBY
1730 T2.5AL 250V
1740 T2.5AL 250V
VSND_POS
VCC_10_POS
VSND_NEG
VCC_10_NEG
7735 BC869
7736 BC847BW
7745 BC868
7746 BC857BW
BZX384-C10
RES=RESERVED
0305 SHIELDING 3.3
0390 SHIELDING 3.3
0391 SHIELDING 3.3
C704
C703
C702
GND_O
DC PROTECTION
0303 PH-S
NC.
LEFT HIGH
8 Ohm
LEFT LOW
OUT_LH
OUT_PROT
OUT_LL
OUT_RH
OUT_RL
+9V_STBYA
7751 BC847BW
7753 BC857BW
7755 BC847BW
7761 BC857BW
6750 BAV99W
6760 BAV99W
F759
0304 PH-S
RIGHT HIGH
8 Ohm
RIGHT LOW
3122 123 6002.5
CL 36532053_087.eps
180703

0302	C1
0303	A8
0304	E8
0305	E1
0390	E2
0391	E3
1730	B3
1740	D3
2730	C3
2732	C4
2734	D5
2740	E3
2742	E4
2744	E5
2752	C9
2753	C8
2759	D8
2760	B7
2770	B8
2771	B7
2780	F7
2781	F7
2799	F1
3732	C4
3733	C5
3742	E4
3743	E5
3749	C6
3750	C8
3751	C9
3752	C9
3754	C9
3755	D6
3760	D8
3765	E6
3770	B7
3771	B7
3780	E7
3781	E7
3799	E2
5714	C3
5719	D3
5725	D3
5753	B9
6732	C4
6742	E4
6750	D7
6760	D7
7735	C5
7736	C4
7745	D5
7746	E4
7751	C8
7753	C9
7755	D8
7761	D9
C702	F3
C703	E3
C704	E3
F710	C2
F711	C2
F712	C2
F713	C2
F714	C2
F717	D2
F718	D2
F719	D2
F720	D3
F723	D2
F724	D2
F725	D2
F730	B5
F732	C4
F733	C5
F735	C5
F736	C4
F740	D5
F742	E4
F743	E5
F745	D5
F746	E4
F759	C7
F770	A8
F771	A8
F772	A8
F774	A8
F776	A8
F777	A8
F780	E8
F781	E8
F782	F8
F784	F8
F786	F8
F787	F8
F796	E2
F797	E2
F798	E2
F799	E2

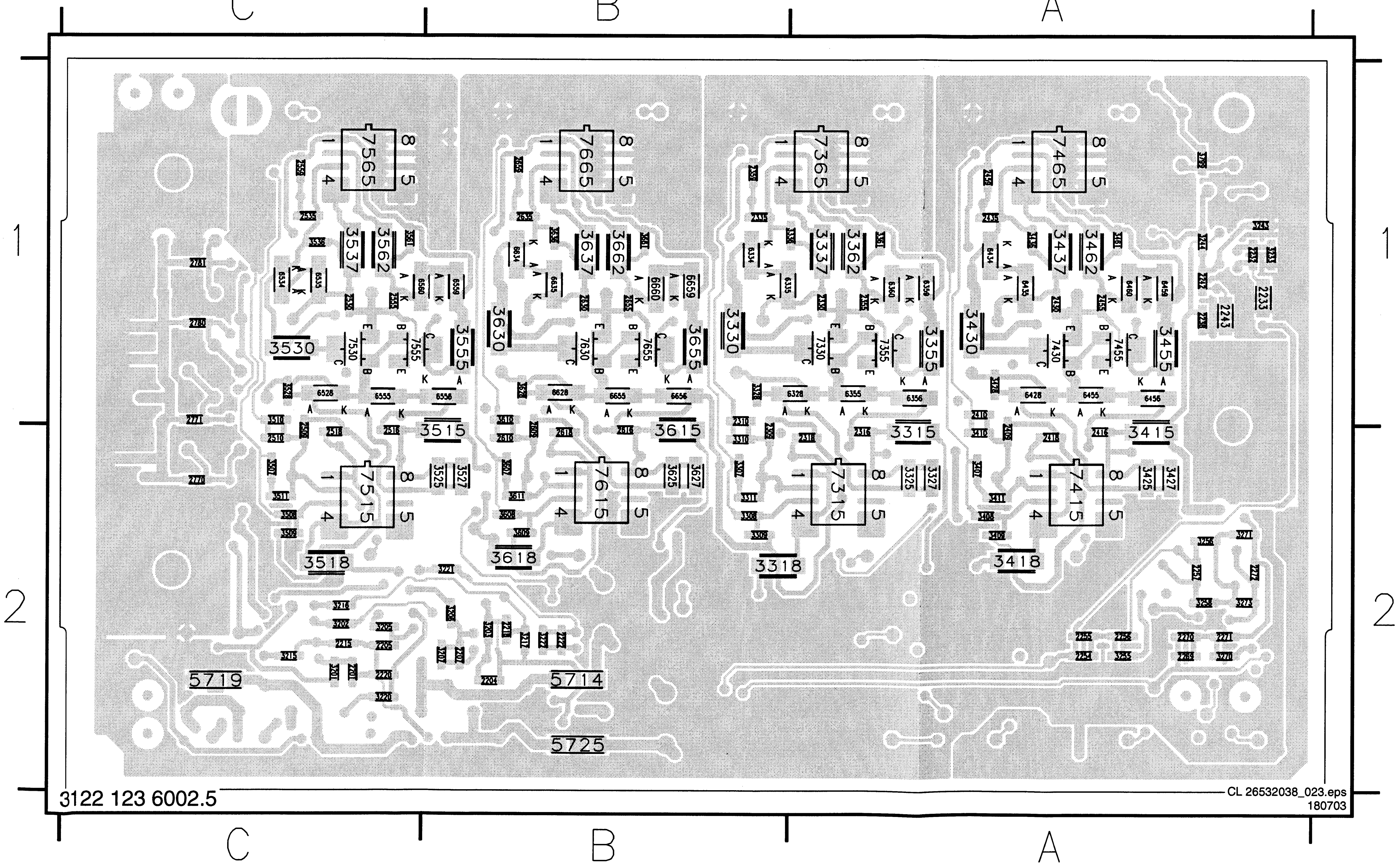
Layout Audio Panel (Top Side)

0302 B1	2216 C1	2315 A1	2440 A2	2566 C2	2734 A1	3211 C1	3272 A1	3403 A1	3601 B1	3749 C2	3780 C2	5565 C2	7225 B1	7503 B1	7753 C1
0303 C1	2217 B1	2319 A1	2460 A2	2615 B1	2740 A1	3230 B1	3274 A1	3404 A1	3602 B1	3750 C1	3781 C2	5635 B2	7238 A2	7540 C2	7755 C1
0304 C2	2221 B1	2334 A2	2465 A2	2619 B1	2742 A1	3231 A2	3301 A1	3406 A1	3603 B1	3751 C1	5335 A2	5660 B2	7260 A1	7602 B1	7761 C1
0388 C1	2224 B1	2340 A2	2466 A2	2634 B2	2744 A1	3232 A2	3302 A1	3440 A2	3604 B1	3752 C1	5360 B2	5665 B2	7302 A1	7603 B1	
1730 B1	2225 B1	2360 B2	2515 C1	2640 B2	2752 C1	3234 A2	3303 A1	3501 B1	3606 B1	3754 C1	5365 A2	5753 C1	7303 B1	7640 B2	
1740 B1	2234 A2	2365 B2	2519 C1	2660 B2	2753 C1	3240 B1	3304 A1	3502 C1	3640 B2	3755 B1	5435 A2	6732 A1	7340 A2	7735 A1	
2202 C1	2239 A2	2366 B2	2534 B2	2665 B2	2759 C1	3241 A2	3306 B1	3503 B1	3732 A1	3760 C1	5460 A2	6742 A1	7402 A1	7736 A1	
2203 B1	2244 A2	2415 A1	2540 C2	2666 B2	2760 C1	3242 A2	3340 A2	3504 B1	3733 A1	3765 B1	5465 A2	6750 C1	7403 A1	7745 A1	
2206 C1	2260 A1	2419 A1	2560 C2	2730 B1	2799 A1	3257 A1	3401 A1	3506 C1	3742 A1	3770 C1	5535 B2	6760 C1	7440 A2	7746 A1	
2212 C1	2261 A1	2434 A2	2565 C2	2732 B1	3210 C1	3259 A1	3402 A1	3540 B2	3743 A1	3771 C1	5560 C2	7211 C1	7502 C1	7751 C1	


C
B
A
1
2
0388
0302
0303
0304
1740
1730
2202
2216
2206
7225
2752
2753
2221
2730
2732
7735
2742
7745
2744
2740
2734
7260
2760
2519
2515
2619
2615
2319
2315
2419
2415
5560
5535
5660
5635
5360
5335
5460
5435
7540
7640
7340
7440
2560
2534
2660
2634
2360
2334
2460
2434
7238
5565
5665
5365
5465
3122 123 6002.5
CL 26532038_022.eps
180703

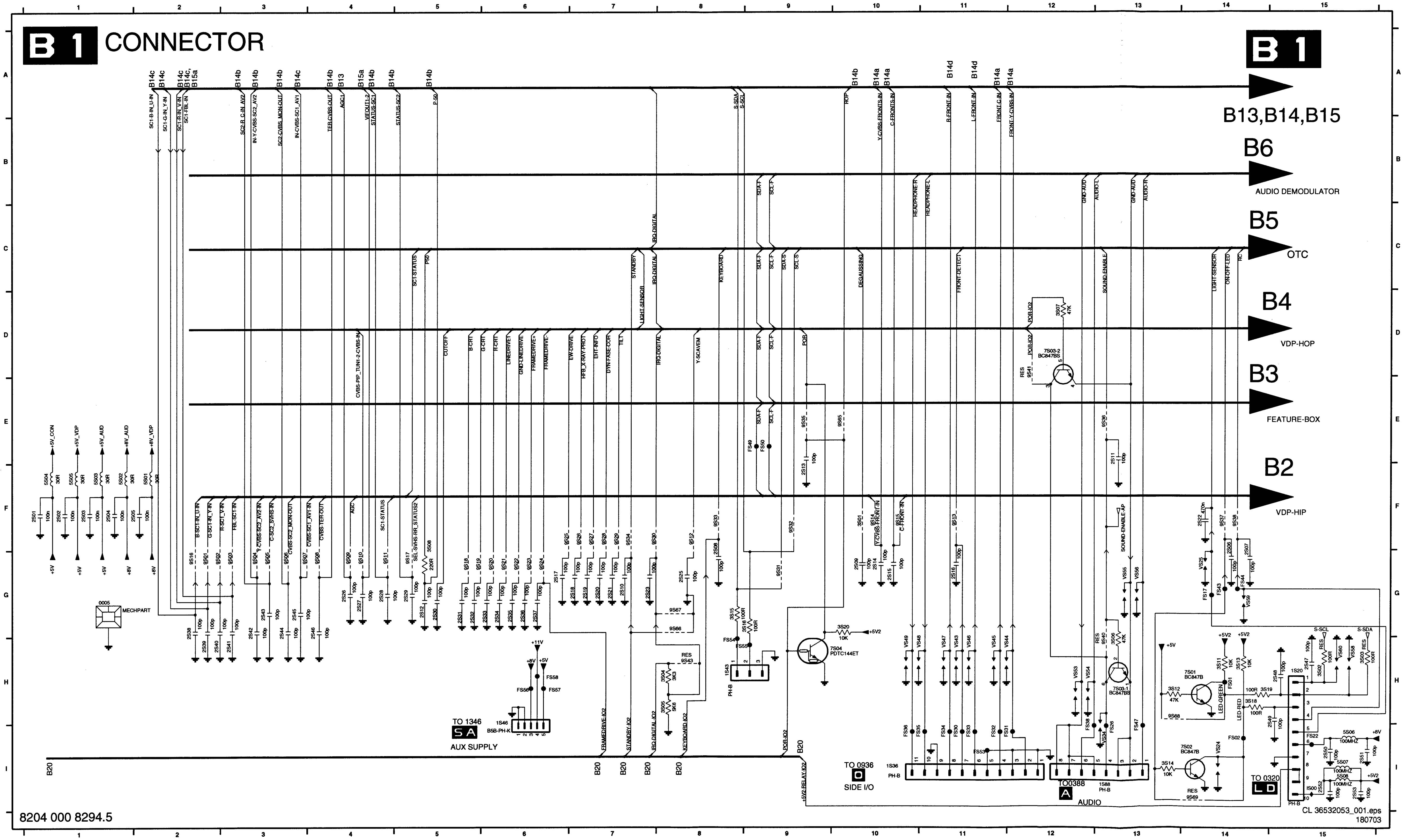
Layout Audio Panel (Bottom Side)

2201	C2
2204	B2
2205	C2
2207	B2
2215	C2
2218	B2
2220	C2
2222	B2
2232	A1
2233	A1
2238	A1
2242	A1
2243	A1
2254	A2
2255	A2
2256	A2
2257	A2
2269	A2
2270	A2
2271	A2
2272	A2
2309	B2
2310	B1
2316	A2
2318	A2
2330	A1
2335	B1
2355	A1
2359	B1
2409	A2
2410	A1
2416	A2
2418	A2
2430	A1
2435	A1
2455	A1
2459	A1
2509	C2
2510	C2
2516	C2
2518	C2
2530	C1
2535	C1
2555	C1
2559	C1
2609	B2
2610	B2
2616	B2
2618	B2
2630	B1
2635	B1
2655	B1
2659	B1
2770	C2
2771	C1
2780	C1
2781	C1
3201	C2
3202	C2
3203	B2
3205	C2
3206	B2
3207	B2
3215	C2
3216	C2
3217	B2
3220	C2
3221	B2
3222	B2
3233	A1
3243	A1
3244	A1
3255	A2
3256	A2
3258	A2
3270	A2
3271	A2
3273	A2
3307	B2
3308	B2
3309	B2
3310	B2
3311	B2
3315	A2
3318	B2
3325	A2
3327	A2
3328	B1
3330	B1
3336	A1
3337	A1
3355	A1
3361	A1
3362	A1
3407	A2
3408	A2
3409	A2
3410	A2
3411	A2
3415	A2
3418	A2
3425	A2
3427	A2
3428	A1
3430	A1
3436	A1
3437	A1
3455	A1
3461	A1
3462	A1
3507	C2
3508	C2
3509	C2
3510	C1
3511	C2
3515	B2
3518	C2
3525	B2
3527	B2
3528	C1
3530	C1
3536	C1
3537	C1
3555	B1
3561	C1
3562	C1
3607	B2
3608	B2
3609	B2
3610	B1
3611	B2
3615	B2
3618	B2
3625	B2
3627	B2
3628	B1
3630	B1
3636	B1
3637	B1
3655	B1
3661	B1
3662	B1
3799	A1
5714	B2
5719	C2
5725	B2
6328	A1
6334	B1
6335	B1
6355	A1
6356	A1
6359	A1
6360	A1
6428	A1
6434	A1
6435	A1
6455	A1
6456	A1
6459	A1
6460	A1
6528	C1
6534	C1
6535	C1
6555	C1
6556	B1
6559	B1
6560	C1
6628	B1
6634	B1
6635	B1
6655	B1
6656	B1
6659	B1
6660	B1
7315	A2
7330	A1
7355	A1
7365	A1
7415	A2
7430	A1
7455	A1
7465	A1
7515	C2
7530	C1
7555	C1
7565	C1
7615	B2
7630	B1
7655	B1
7665	B1


C
B
A
1
2
7565
7665
7365
7465
3537
3562
3637
3662
3337
3362
3437
3462
3530
3630
3330
3430
3555
3655
3355
3455
3515
3615
3315
3415
7515
7615
7315
7415
3518
3618
3318
3418
2243
2233
5719
5714
5725
3122 123 6002.5
CL 26532038_023.eps
180703

SSB (AA): Connector

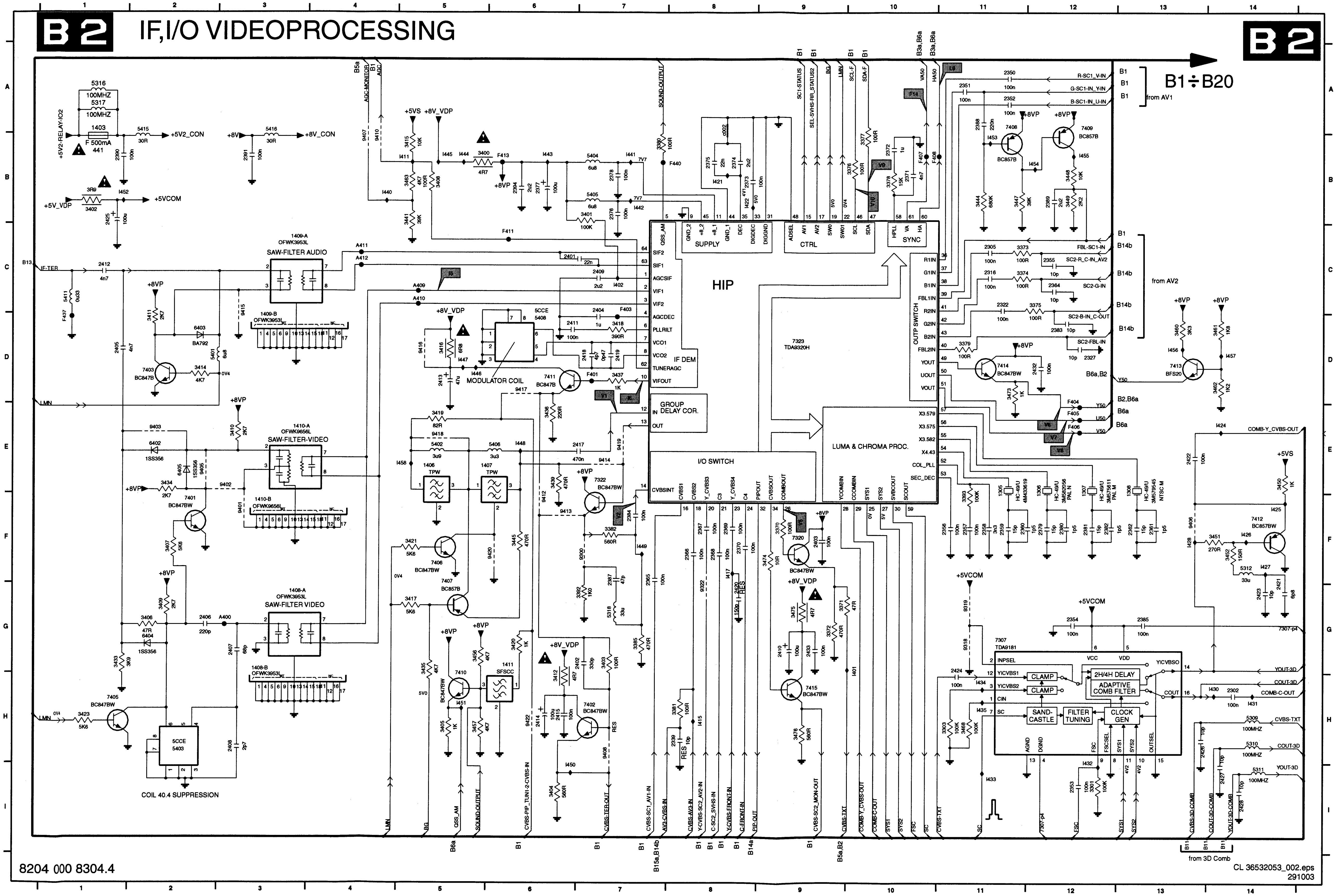
0005 G1
1S20 H15
1S36 I10
1S43 H8
1S46 H6
1S88 I13
2S01 F1
2S02 F1
2S03 F1
2S04 F1
2S05 F2
2S06 F14
2S07 F14
2S08 F8
2S09 G10
2S10 G7
2S11 E13
2S12 G5
2S13 F9
2S14 G10
2S15 G10
2S16 G11
2S17 G6
2S18 G7
2S19 G7
2S20 G7
2S21 G7
2S22 F14
2S23 G7
2S25 G8
2S26 G4
2S27 G4
2S28 G4
2S29 G5
2S30 G5
2S31 G5
2S32 G5
2S33 G6
2S34 G6
2S35 G6
2S36 G6
2S37 G6
2S38 G2
2S39 H2
2S40 H2
2S41 H3
2S42 G3
2S43 G3
2S44 G3
2S45 G3
2S46 G4
2S47 H15
2S48 H15
2S49 H15
2S50 I15
2S51 I15
2S52 I15
2S53 I15
3S01 F10
3S02 H15
3S03 H15
3S04 H8
3S05 H8
3S06 H13
3S07 D12
3S08 F5
3S11 H14
3S12 H13
3S13 H14
3S14 I13
3S15 G8
3S16 G9
3S18 H14
3S19 H14
3S20 G10
5S01 F2
5S02 F1
5S03 F1
5S04 F1
5S05 F1
5S06 I15
5S07 I15
5S08 I15
7S01 H14
7S02 I13
7S03-1 H13
7S03-2 D12
7S04 H9
9S01 G2
9S02 G2
9S03 G3
9S04 G3
9S05 G3
9S06 G3
9S07 G3
9S08 G4
9S09 G4
9S10 G4
9S11 G4
9S12 F8
9S13 F11
9S14 F10
9S15 F10
9S16 G2
9S17 G5
9S18 G5
9S19 G5
9S20 G6
9S21 G6
9S22 G6
9S23 G6
9S24 G6
9S25 F6
9S26 F7
9S27 F7
9S28 F7
9S29 F7
9S30 F7
9S31 G9
9S32 F9
9S33 F8
9S34 F7
9S35 E9
9S36 E13
9S37 F14
9S38 F14
9S40 H13
9S41 D12
9S43 H8
9S65 E10
9S66 G8
9S67 G8
9S68 H13
9S69 I14
FS01 H14
FS02 I14
FS17 G14
FS22 I15
FS26 I13
FS30 I11
FS31 I12
FS32 I11
FS33 I11
FS34 I11
FS35 I11
FS36 I10
FS38 I12
FS43 G14
FS44 G14
FS47 I13
FS49 E9
FS50 E9
FS53 I11
FS54 H8
FS55 H8
FS56 H6
FS57 H6
FS58 H6
IS00 I15
VS24 I14
VS25 G14
VS34 I13
VS43 H11
VS44 H12
VS45 H11
VS46 H11
VS47 H11
VS48 H11
VS49 H10
VS53 H12
VS54 H12
VS55 G13
VS56 G13
VS58 H15
VS59 G14
VS60 H15


B1 CONNECTOR
B1
B13,B14,B15
B6
AUDIO DEMODULATOR
B5
OTC
B4
VDP-HOP
B3
FEATURE-BOX
B2
VDP-HIP
B20
MECHPART
0005
TO 1346
5A
AUX SUPPLY
TO 0936
SIDE I/O
TO0388
AUDIO
TO 0320
LD
7S04
PDTC144ET
7S03-2
BC847BS
7S03-1
BC847BS
7S01
BC847B
7S02
BC847B
LED-GREEN
LED-RED
S-SCL
S-SDA
+5V
+8V
+5V_CON
+5V_VDP
+5V_AUD
+8V_AUD
+8V_VDP
+11V
+5V2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I

8204 000 8294.5

CL 36532053_001.eps
180703

SSB (AA): IF, I/O Videoprocessing

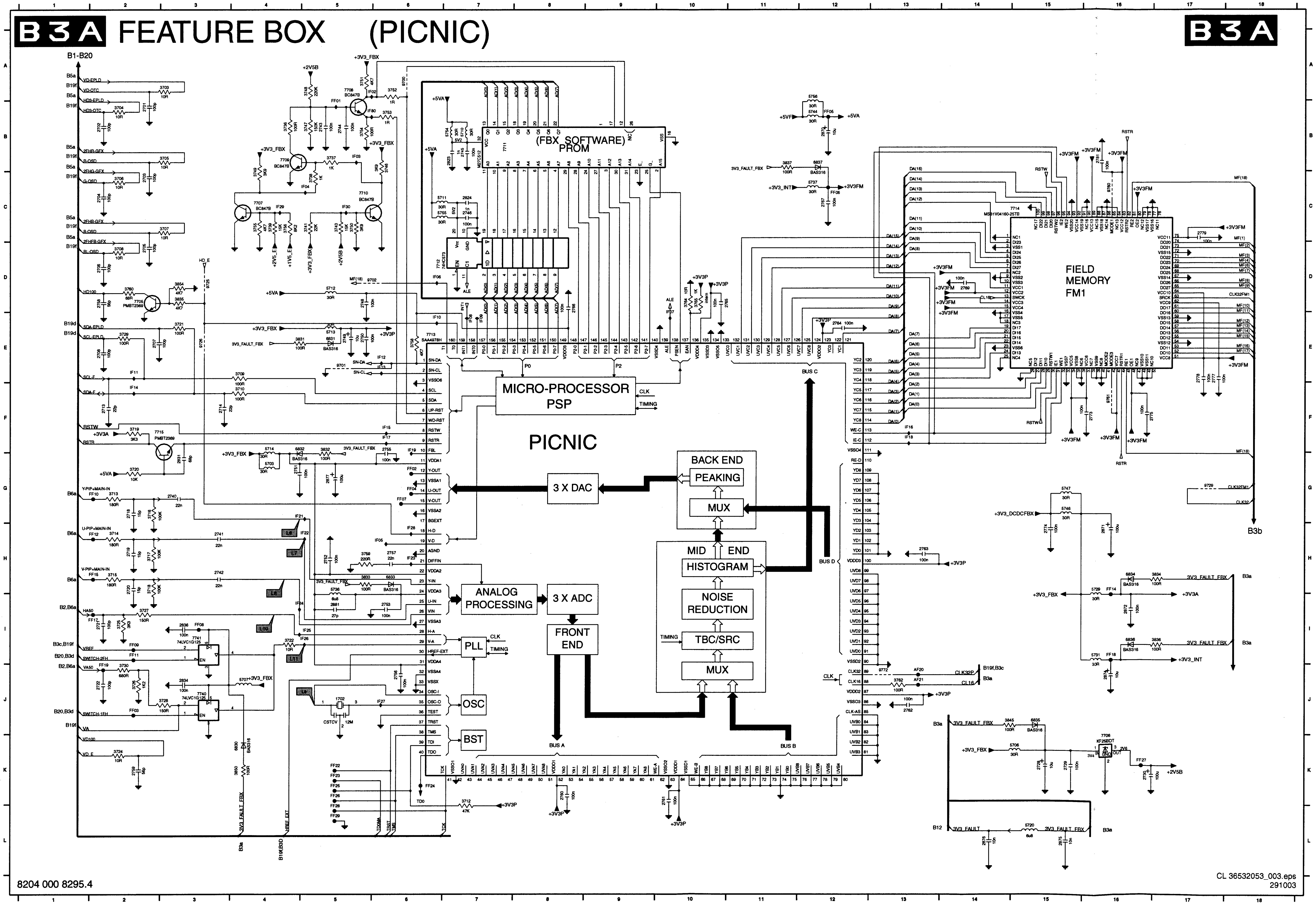

B2
IF,I/O VIDEOPROCESSING
B2
B1÷B20
from AV1
from AV2
HIP
7323
TDA9320H
SUPPLY
CTRL
SYNC
IF DEM
GROUP DELAY COR.
I/O SWITCH
LUMA & CHROMA PROC.
OUTP SWITCH
SAW-FILTER AUDIO
SAW-FILTER-VIDEO
SAW-FILTER VIDEO
MODULATOR COIL
COIL 40.4 SUPPRESSION
7307
TDA9181
CLAMP
2H/4H DELAY
ADAPTIVE COMB FILTER
SAND-CASTLE
FILTER TUNING
CLOCK GEN
from 3D Comb
+5V2_CON
+8V_CON
+5VCOM
+8V_VDP
+8VP
+5VS
IF-TER
LMN
SOUND-OUTPUT
AGC-MONITOR
COMB-Y_CVBS-OUT
YOUT-3D
COUT-3D
COMB-C-OUT
CVBS-TXT

8204 000 8304.4

CL 36532053_002.eps
291003

1305	E11
1306	E12
1307	E12
1308	E13
1403	A1
1406	E5
1407	E5
1408-A	G3
1408-B	G3
1409-A	C3
1409-B	D3
1410-A	E4
1410-B	F3
1411	G6
2302	H14
2305	C11
2316	C11
2322	C11
2327	D12
2339	H8
2350	A11
2351	A11
2352	A11
2353	I12
2354	G12
2355	C12
2356	F11
2357	F11
2358	F11
2359	F11
2360	F11
2361	F13
2362	F13
2364	C12
2365	F7
2366	F8
2367	F8
2368	F8
2369	F8
2370	F8
2371	B10
2372	B10
2373	B8
2374	B8
2375	B8
2376	B7
2377	B6
2378	B7
2379	F12
2380	F12
2381	F12
2382	F12
2383	D12
2384	F7
2385	G13
2387	F7
2388	A11
2389	B12
2390	B1
2391	B3
2394	B6
2399	F7
2401	C6
2402	G7
2403	F9
2404	C7
2405	D1
2406	G2
2407	G3
2408	H3
2409	C7
2410	G9
2411	D6
2412	C1
2413	D5
2414	H6
2415	H6
2417	E7
2418	D7
2419	D7
2420	G8
2421	F14
2422	E13
2423	G14
2424	G11
2425	B1
2426	H13
2427	I14
2428	I14
2432	D12
2433	G9
3301	I12
3303	H11
3370	F9
3371	G9
3372	G9
3373	C11
3374	C11
3375	C12
3376	B10
3377	B10
3378	B10
3379	D11
3380	B7
3381	H8
3382	F7
3385	G7
3392	G7
3393	F11
3400	B5
3401	B7
3402	B1
3403	G7
3404	I6
3405	H5
3406	G2
3407	F2
3408	B5
3409	G2
3410	E3
3411	D2
3412	H6
3414	D2
3415	B5
3416	D5
3417	G5
3418	D7
3419	E5
3420	G6
3421	F5
3423	H1
3433	G1
3434	E2
3435	G5
3436	E6
3437	D7
3439	E6
3441	B5
3444	B11
3445	F6
3447	B11
3448	B12
3449	B12
3450	E14
3451	F14
3452	F14
3456	G5
3457	H5
3460	D13
3461	D14
3462	D14
3463	B5
3468	H11
3473	D11
3474	F9
3475	G9
3476	H9
5309	H14
5310	H14
5311	I14
5312	F14
5316	A1
5317	A1
5318\	G7
5401	D2
5402	E5
5403	H2
5404	B7
5405	B7
5406	E6
5408	D6
5411	C1
5415	A2
5416	A3
6402	E2
6403	D2
6404	G2
6405	E2
7307	G11
7320	F9
7322	E7
7323	D9
7401	F2
7402	H7
7403	D2
7405	H1
7406	F5
7407	G5
7408	A11
7409	A12
7410	H5
7411	D6
7412	F14
7413	D13
7414	D11
7415	H9
9300	F6
9318	G11
9319	G11
9322	G8
9401	F3
9402	E3
9403	E2
9405	E2
9406	F13
9407	B4
9408	H7
9410	B4
9412	F6
9413	F6
9414	E7
9415	C3
9416	D5
9417	D6
9418	E5
9419	E7
9420	F6
9422	H6
A400	G3
A409	C5
A410	C5
A411	C4
A412	C4
F401	D7
F403	C7
F404	D12
F405	E12
F406	E12
F407	B10
F408	B10
F411	C6
F413	B6
F437	D1
F440	B8
I401	G10
I402	C7
I411	B5
I415	H8
I417	F8
I421	B8
I422	B8
I424	E14
I425	F14
I426	F14
I427	F14
I428	F13
I430	H14
I431	H14
I432	I12
I433	I11
I434	H11
I435	H11
I440	B4
I441	B7
I442	B7
I443	B6
I444	B5
I445	B5
I446	D5
I447	D5
I448	E6
I449	F7
I450	I6
I451	H5
I452	B1
I453	B11
I454	B12
I455	B12
I456	D13
I457	D14
I458	E5
c002	A8

SSB (AA): Feature Box (PICNIC)

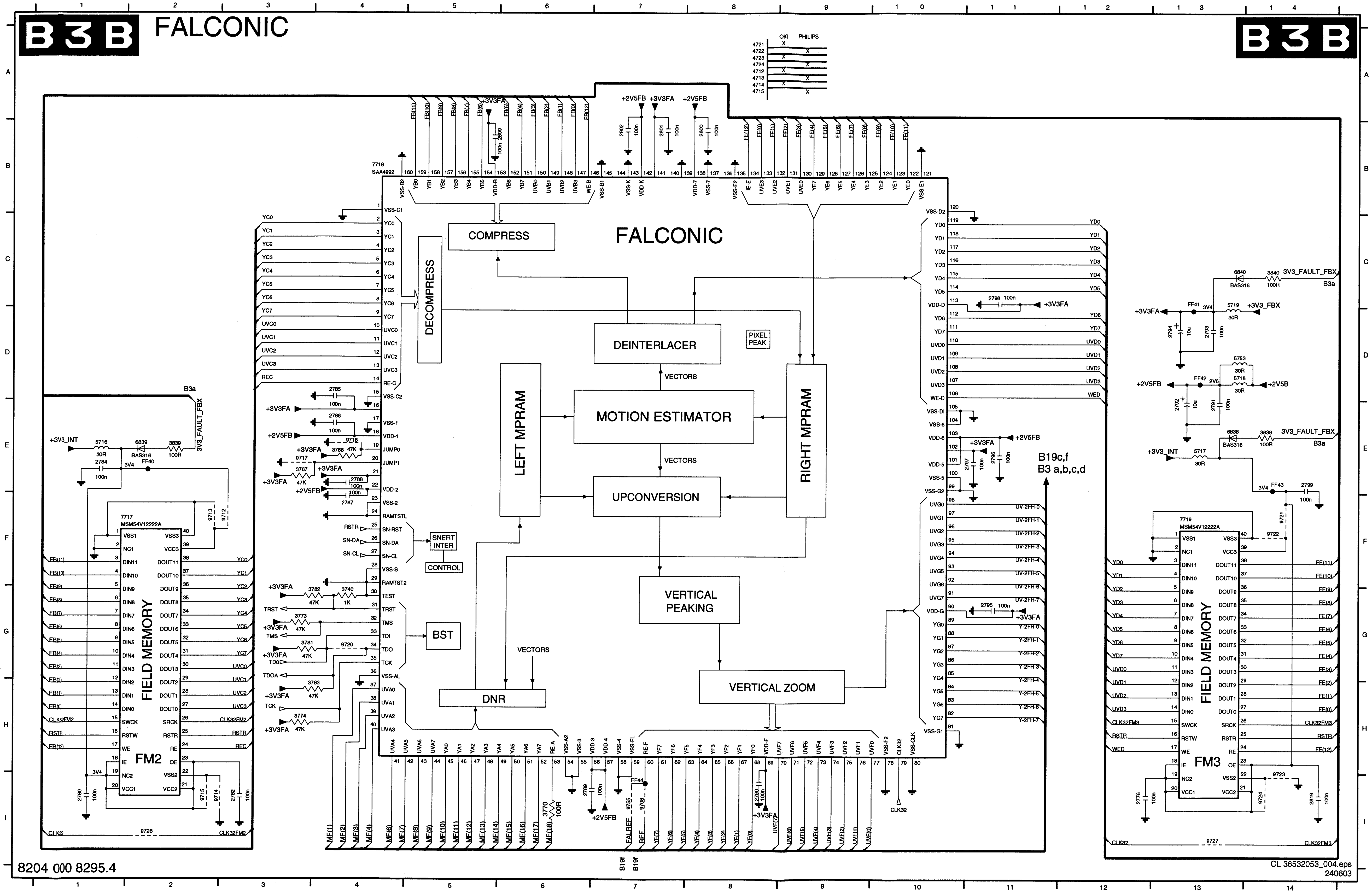

B3A
FEATURE BOX (PICNIC)
B3A
B1-B20
(FBX SOFTWARE) PROM
7711
7712 74HC573
MICRO-PROCESSOR PSP
7713 SAA4978H
PICNIC
3 X DAC
BACK END
PEAKING
MUX
MID END
HISTOGRAM
NOISE REDUCTION
TBC/SRC
MUX
ANALOG PROCESSING
3 X ADC
FRONT END
PLL
OSC
BST
BUS A
BUS B
BUS C
BUS D
CLK
TIMING
FIELD MEMORY FM1
7714 MSM51V04160-25TB
7705 PMBT2369
7706 BC847B
7707 BC847B
7708 BC847B
7709 BC847B
7710 BC847B
7715 PMBT2369
7740 74LVC1G125
7741 74LVC1G125
7706 KF25BDT
1702 CSTCV 12M
+3V3_FBX
+2V5B
+5VA
+5VF
+3V3FM
+3V3P
+3V3A
+3V3_INT
3V3_FAULT_FBX
+3V3_DCDCFBX
RSTW
RSTR
MF(18)
CLK32FM1
B3b
B3a
B12
B19f,B3D
B19f,B3c
B20,B3d
B2,B6a
B3c,B19f
B5a
B19f
B19d
B6a
HD_E
VD-EPLD
VD-OTC
HDS-EPLD
HDS-OTC
SDA-EPLD
SCL-EPLD
SCL-F
SDA-F
Y-PIP+MAIN-IN
U-PIP+MAIN-IN
V-PIP+MAIN-IN
HA50
VREF
SWITCH-2FH
VA50
SWITCH-1FH
VA
VD100
VD_E
HD100

8204 000 8295.4

CL 36532053_003.eps
291003

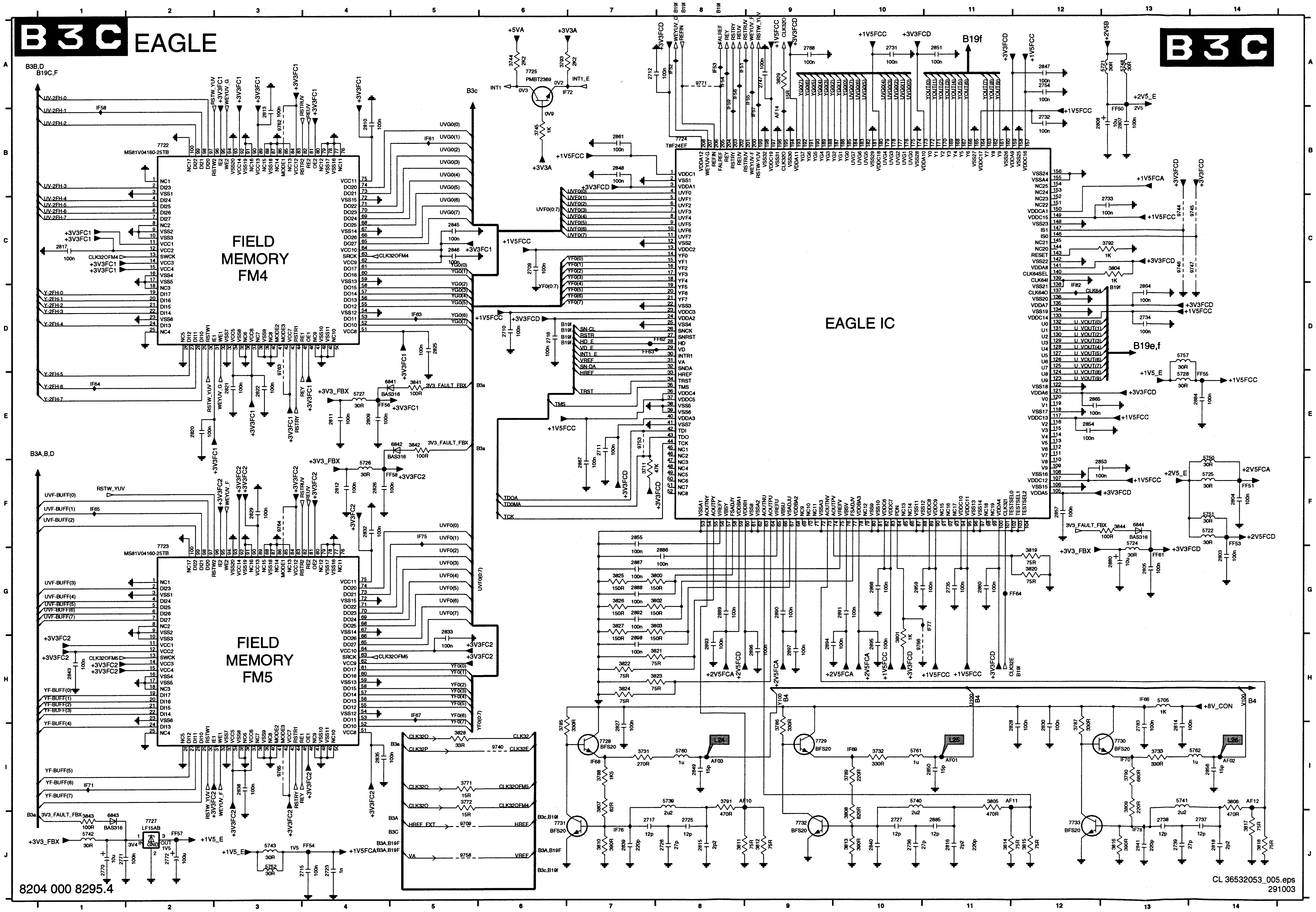
1702	J5
2701	B2
2702	B2
2703	C2
2704	C2
2705	D2
2706	D2
2707	E2
2708	E2
2713	F2
2714	F3
2718	G2
2719	H2
2720	H2
2721	I2
2722	J2
2728	K15
2729	K15
2730	K16
2740	G3
2741	H3
2742	H3
2743	B5
2744	B5
2745	B7
2746	C7
2748	D5
2749	E5
2750	E5
2751	G4
2752	H5
2753	I6
2755	F6
2756	J6
2757	H6
2758	D2
2759	K2
2760	K8
2761	K10
2762	J13
2763	H13
2764	E12
2765	D10
2766	D8
2767	C12
2769	D14
2773	F16
2774	H15
2775	F16
2777	E17
2778	E17
2779	C17
2781	B16
2823	B7
2824	C7
2831	G3
2834	J3
2836	I3
2870	B12
2871	H16
2872	I16
2874	J16
2875	L15
2876	L14
2877	G5
2881	I5
3703	A3
3704	B2
3705	B3
3706	C2
3707	C3
3708	D2
3709	E4
3710	F4
3712	K7
3713	G2
3714	H2
3715	H2
3716	G2
3717	H2
3718	H2
3719	F2
3720	G2
3721	E3
3722	I4
3724	K2
3725	I2
3726	J2
3727	I2
3728	J3
3729	E2
3730	J2
3736	B4
3737	B5
3738	C5
3739	C4
3741	C5
3743	C5
3746	B6
3747	B5
3748	A5
3749	C4
3750	C5
3751	A5
3752	A6
3753	B6
3754	B5
3755	C4
3756	C4
3758	E6
3759	H5
3760	D2
3762	J13
3764	D10
3765	D10
3831	E4
3832	F5
3833	H5
3834	H17
3835	D3
3836	I17
3837	B11
3845	J14
3850	K4
3854	D3
5703	G4
5706	K15
5707	J4
5710	B7
5711	C6
5712	D5
5713	E5
5714	F4
5720	L15
5729	H16
5731	I16
5736	H5
5737	C12
5744	B12
5746	G15
5747	G15
5754	B7
5755	C6
5756	A12
6830	K4
6831	E5
6832	F4
6833	H6
6834	H16
6835	J15
6836	I16
6837	B12
7705	D2
7706	K16
7707	C4
7708	A5
7709	B4
7710	C5
7711	B7
7712	D6
7713	E6
7714	C15
7715	F2
7740	J3
7741	I3
9700	A6
9701	E5
9702	D5
9725	D3
9726	E3
9729	G17
9760	C16
9761	F16
9772	J13
AF20	J13
AF21	J13
FF01	B5
FF02	G6
FF03	J2
FF04	G6
FF05	B12
FF06	C12
FF07	G6
FF08	I3
FF09	I2
FF10	G2
FF11	I2
FF12	H2
FF14	H16
FF15	H2
FF17	I2
FF18	I16
FF19	J2
FF22	K5
FF23	K5
FF24	K6
FF25	K5
FF26	K5
FF27	K16
FF28	L5
FF29	L5
IF02	A5
IF03	B5
IF04	C5
IF05	H6
IF06	D6
IF07	E10
IF08	E7
IF09	E7
IF10	E6
IF11	E2
IF12	E6
IF13	E6
IF14	F2
IF15	F6
IF16	F13
IF17	F6
IF18	F13
IF19	F6
IF21	G4
IF22	H5
IF23	H6
IF24	I4
IF25	I5
IF26	I5
IF27	J6
IF28	H6
IF29	C4
IF30	C5
IF80	B5

SSB (AA): Falconic


B3B
FALCONIC
B3B
FALCONIC
COMPRESS
DECOMPRESS
DEINTERLACER
PIXEL PEAK
VECTORS
MOTION ESTIMATOR
LEFT MPRAM
RIGHT MPRAM
VECTORS
UPCONVERSION
VERTICAL PEAKING
VERTICAL ZOOM
DNR
VECTORS
SNERT INTER
CONTROL
BST
7718 SAA4992
7717 MSM54V12222A
FIELD MEMORY
FM2
7719 MSM54V12222A
FIELD MEMORY
FM3
OKI PHILIPS
B19c,f
B3 a,b,c,d
B3a
3V3_FAULT_FBX
+3V3_INT
+3V3FA
+2V5FB
+3V3_FBX
+2V5B
CLK32
8204 000 8295.4
CL 36532053_004.eps
240603

2776	I12
2780	I1
2782	I3
2784	E1
2785	D4
2786	E4
2787	F4
2788	E4
2789	I6
2790	I8
2791	E13
2792	E13
2793	D13
2794	D13
2795	G11
2796	E11
2797	E11
2798	C11
2799	E14
2800	B8
2801	B7
2802	B7
2819	I14
2899	B5
3740	G4
3766	E4
3767	E3
3770	I6
3773	G3
3774	H3
3781	G3
3782	G4
3783	H4
3838	E14
3839	E2
3840	C14
5716	E1
5717	E13
5718	D13
5719	C13
5753	D13
6838	E13
6839	E2
6840	C13
7717	F1
7718	B4
7719	F13
9708	I7
9712	F3
9713	F2
9714	I2
9715	I2
9716	E4
9717	E3
9720	G4
9721	F14
9722	F14
9723	I14
9724	I14
9727	I13
9728	I2
9755	I7
FF40	E2
FF41	C13
FF42	D13
FF43	E14
FF44	I7

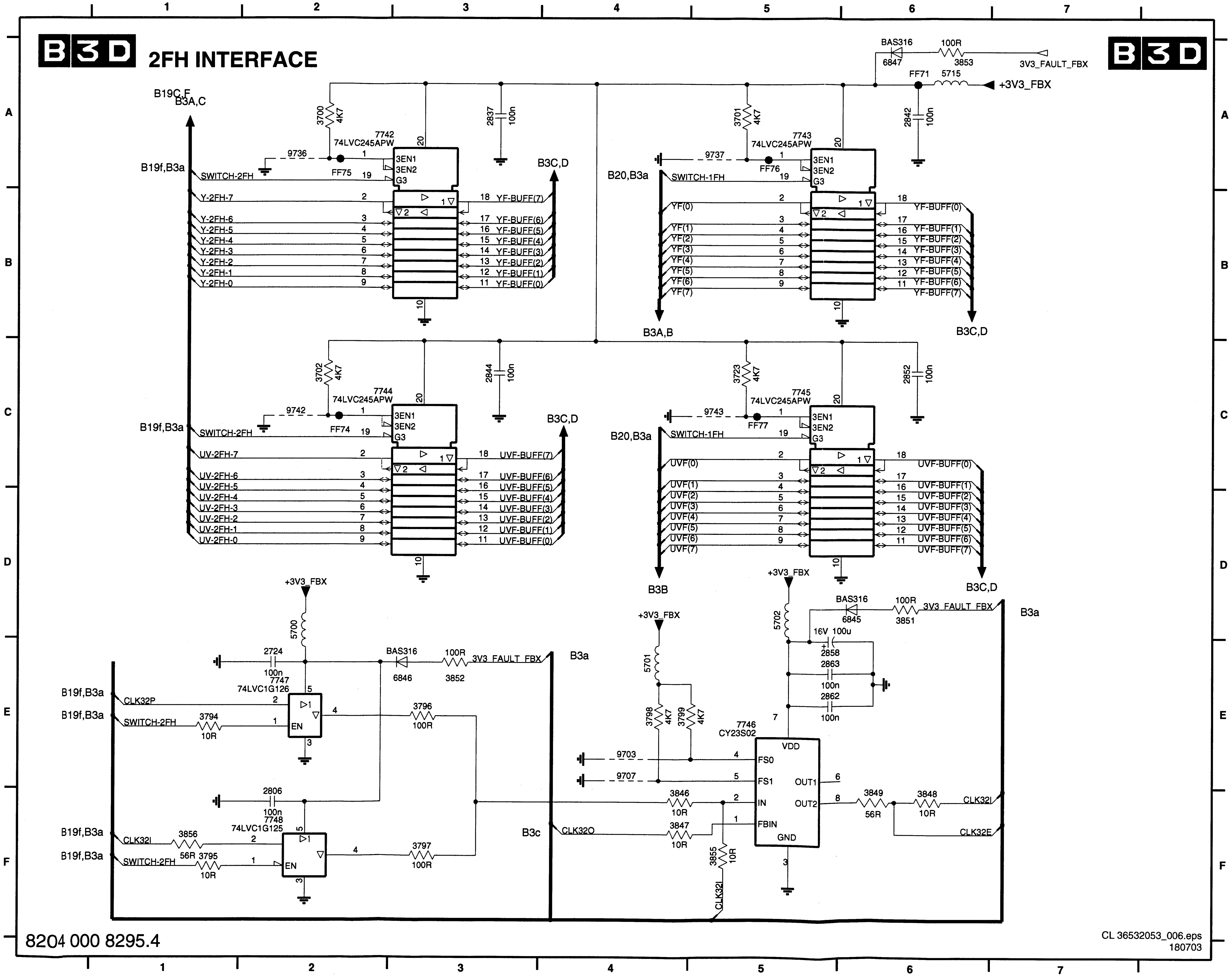
SSB (AA): Eagle


B3C
EAGLE
B3C
FIELD MEMORY FM4
FIELD MEMORY FM5
MS81V04160-25TB
7722
7723
EAGLE IC
7724
T8F24EF
PMBT2369
7725
B19f
B19e,f
BFS20
7727
LF15AB
+5VA
+3V3A
+1V5FCC
+3V3FCD
+3V3FC1
+3V3FC2
+2V5_E
+2V5FCA
+2V5FCD
+1V5_E
+1V5FCA
+3V3_FBX
+8V_CON
INT1
INT1_E
CLK32
CLK32E
CLK32OFM4
CLK32OFM5
HREF_EXT
HREF
VA
VREF
3V3_FAULT_FBX
L24
L25
L26
AF01
AF02
AF03
AF10
AF11
AF12
8204 000 8295.4
CL 36532053_005.eps
291003

2709	C6
2710	D6
2711	E7
2712	A7
2715	J4
2716	D6
2717	J7
2723	J4
2725	J8
2726	J8
2727	J10
2731	A10
2732	B12
2733	C13
2734	D13
2735	G11
2736	J10
2737	J14
2738	J13
2739	J13
2747	A9
2754	A12
2768	A9
2770	J1
2771	J1
2772	J2
2783	I13
2803	G14
2804	F14
2805	G13
2807	B13
2808	B12
2809	E4
2810	B4
2811	E4
2812	F4
2813	B3
2814	I13
2815	J8
2816	J11
2817	C1
2818	J14
2820	E2
2821	E3
2822	E3
2825	D5
2826	F4
2827	I7
2828	I12
2829	F3
2830	I12
2832	F4
2833	G5
2835	I4
2838	I3
2839	J7
2840	J10
2841	J13
2843	H1
2845	C5
2846	C5
2847	A12
2848	B7
2849	I8
2850	I11
2851	A11
2853	F12
2854	E12
2855	F7
2856	I14
2857	F12
2859	G10
2860	G11
2861	B7
2864	D13
2865	E12
2866	G10
2867	F7
2880	G13
2884	E14
2885	J11
2886	G8
2887	G7
2888	G7
2889	G8
2890	G9
2891	G10
2892	G7
2893	H8
2894	H9
2895	H10
2896	H9
2897	H9
2898	H7
3711	F7
3731	I7
3732	I10
3733	I13
3744	A6
3745	B6
3771	I5
3772	I5
3785	I6
3786	I9
3787	I12
3788	I7
3789	I10
3790	I13
3791	I8
3792	C13
3793	A6
3800	G8
3801	H10
3802	G8
3803	G8
3804	C13
3805	I11
3806	I14
3807	I7
3808	J10
3809	I13
3810	J7
3811	J8
3812	J9
3813	J10
3814	J11
3815	J12
3816	J13
3817	J14
3818	J14
3819	G12
3820	G12
3821	H8
3822	H7
3823	H8
3824	H7
3825	G7
3826	G7
3827	G7
3828	I5
3829	A9
3841	E5
3842	E5
3843	J1
3844	F13
5705	H13
5721	A13
5722	F14
5724	F13
5725	F14
5726	F4
5727	E4
5728	E13
5739	I8
5740	I10
5741	I13
5742	J1
5743	J3
5748	A13
5750	F14
5751	F14
5752	J3
5757	D13
5760	I8
5761	I10
5762	I14
6841	E4
6842	E5
6843	J1
6844	F13
7722	B2
7723	G2
7724	B8
7725	A6
7727	J2
7728	I7
7729	I9
7730	I13
7731	J6
7732	J9
7733	J12
9709	J5
9740	I6
9744	C13
9745	C14
9746	C13
9747	C14
9750	I5
9753	E7
9754	A8
9756	J5
9757	J5
9758	J5
9759	J5
9762	B3
9763	D3
9764	F3
9765	I3
9766	H10
9770	A8
9771	A8
AF01	I11
AF02	I14
AF03	I8
AF10	I9
AF11	I12
AF12	I14
AF14	B9
FF50	B13
FF51	F14
FF53	F14
FF54	J4
FF55	E14
FF56	E4
FF57	J2
FF58	F5
FF61	G13
FF62	D8
FF63	D7
FF64	G12
IF51	A8
IF52	A8
IF53	A8
IF54	A8
IF55	A8
IF56	A8
IF57	B9
IF58	A1
IF59	A8
IF61	B5
IF63	D5
IF64	E1
IF65	F1
IF66	H13
IF67	H5
IF68	I7
IF69	I10
IF70	I13
IF71	I1
IF72	A6
IF75	F5
IF76	J7
IF77	G11
IF78	J13
IF82	D12

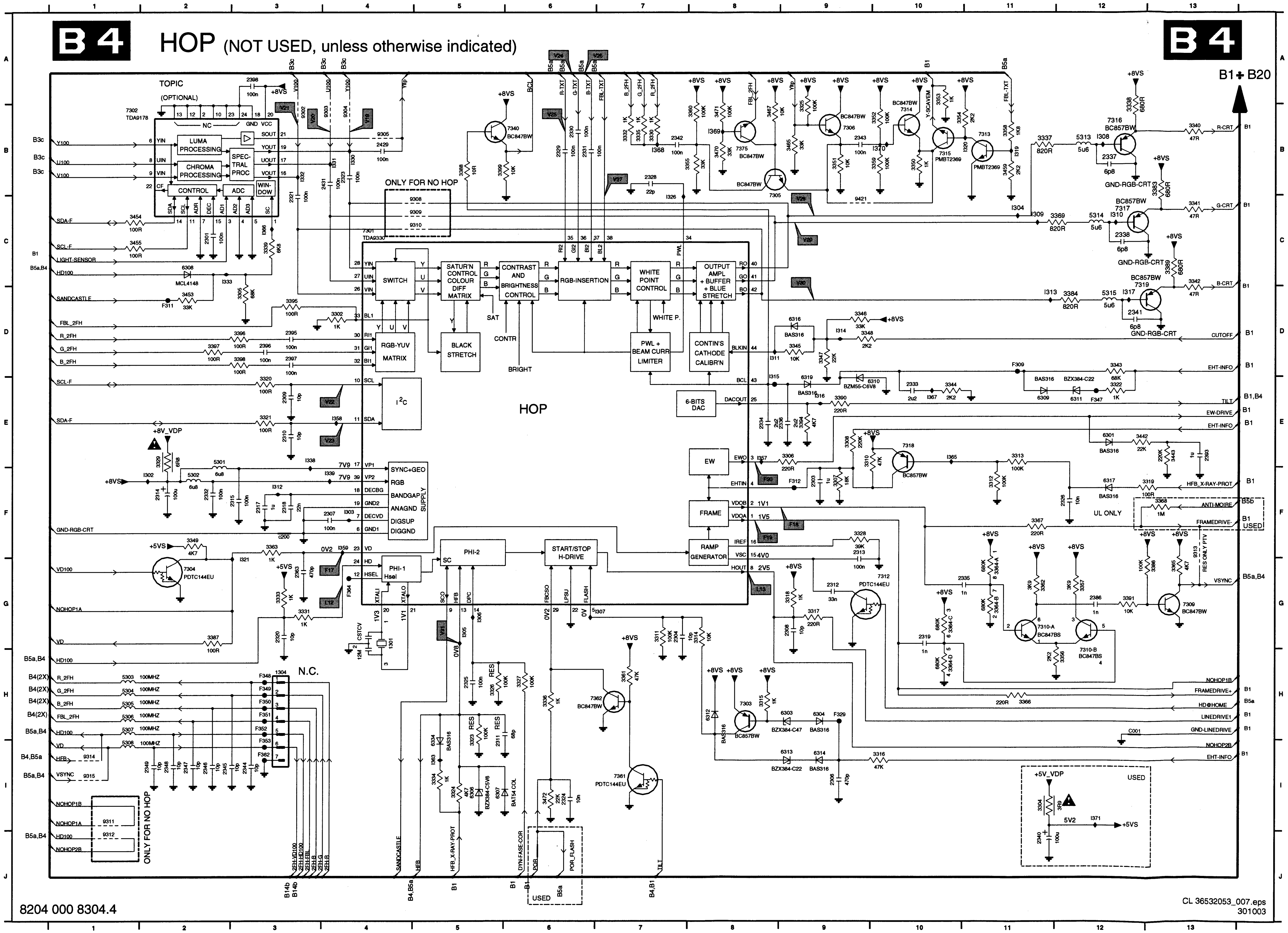
SSB (AA): 2FH Interface

2724 E2	2842 A6	2858 E5	3700 A2	3723 C5	3796 E3	3799 E4	3848 F6	3852 E3	3856 F1	5702 D5	6846 E3	7743 A5	7746 E5	9703 E4	9737 A5	9742 C2	9749 C5	FF75 A2
2806 F2	2844 C3	2862 E5	3701 A5	3794 E1	3797 F3	3846 F4	3849 F6	3853 A6	5700 D2	5715 A6	6847 A6	7744 C3	7747 E2	9707 E4	9738 A2	9743 C5	FF71 A6	FF76 A5
2837 A3	2852 C6	2863 E5	3702 C2	3795 F1	3798 E4	3847 F4	3851 D6	3855 F5	5701 E4	6845 D6	7742 A3	7745 C5	7748 F2	9736 A2	9739 A5	9748 C2	FF74 C2	FF77 C5


B3D
2FH INTERFACE
B3D
1 2 3 4 5 6 7
A B C D E F
B19C,F
B3A,C
BAS316
6847
100R
3853
3V3_FAULT_FBX
FF71
5715
+3V3_FBX
3700 4K7
2837 100n
7742 74LVC245APW
9736
FF75
B19f,B3a
SWITCH-2FH
3EN1
3EN2
G3
1 19 20 10
Y-2FH-7
Y-2FH-6
Y-2FH-5
Y-2FH-4
Y-2FH-3
Y-2FH-2
Y-2FH-1
Y-2FH-0
YF-BUFF(7)
YF-BUFF(6)
YF-BUFF(5)
YF-BUFF(4)
YF-BUFF(3)
YF-BUFF(2)
YF-BUFF(1)
YF-BUFF(0)
B3C,D
3701 4K7
7743 74LVC245APW
9737
FF76
B20,B3a
SWITCH-1FH
YF(0)
YF(1)
YF(2)
YF(3)
YF(4)
YF(5)
YF(6)
YF(7)
2842 100n
B3A,B
B3C,D
3702 4K7
2844 100n
7744 74LVC245APW
9742
FF74
UV-2FH-7
UV-2FH-6
UV-2FH-5
UV-2FH-4
UV-2FH-3
UV-2FH-2
UV-2FH-1
UV-2FH-0
UVF-BUFF(7)
UVF-BUFF(6)
UVF-BUFF(5)
UVF-BUFF(4)
UVF-BUFF(3)
UVF-BUFF(2)
UVF-BUFF(1)
UVF-BUFF(0)
3723 4K7
2852 100n
7745 74LVC245APW
9743
FF77
UVF(0)
UVF(1)
UVF(2)
UVF(3)
UVF(4)
UVF(5)
UVF(6)
UVF(7)
B3B
+3V3_FBX
5700
2724 100n
7747 74LVC1G126
BAS316
6846
100R
3852
3V3_FAULT_FBX
B3a
CLK32P
3794 10R
EN
3796 100R
2806 100n
7748 74LVC1G125
CLK32I
3856 56R
3795 10R
3797 100R
B3c
CLK32O
+3V3_FBX
5701
3798 4K7
3799 4K7
9703
9707
3846 10R
3847 10R
3855 10R
CLK32I
+3V3_FBX
5702
BAS316
6845
100R
3851
16V 100u
2858
2863 100n
2862 100n
7746 CY23S02
VDD
FS0
FS1
IN
FBIN
OUT1
OUT2
GND
3849 56R
3848 10R
CLK32I
CLK32E
CL 36532053_006.eps
180703

8204 000 8295.4

SSB (AA): HOP

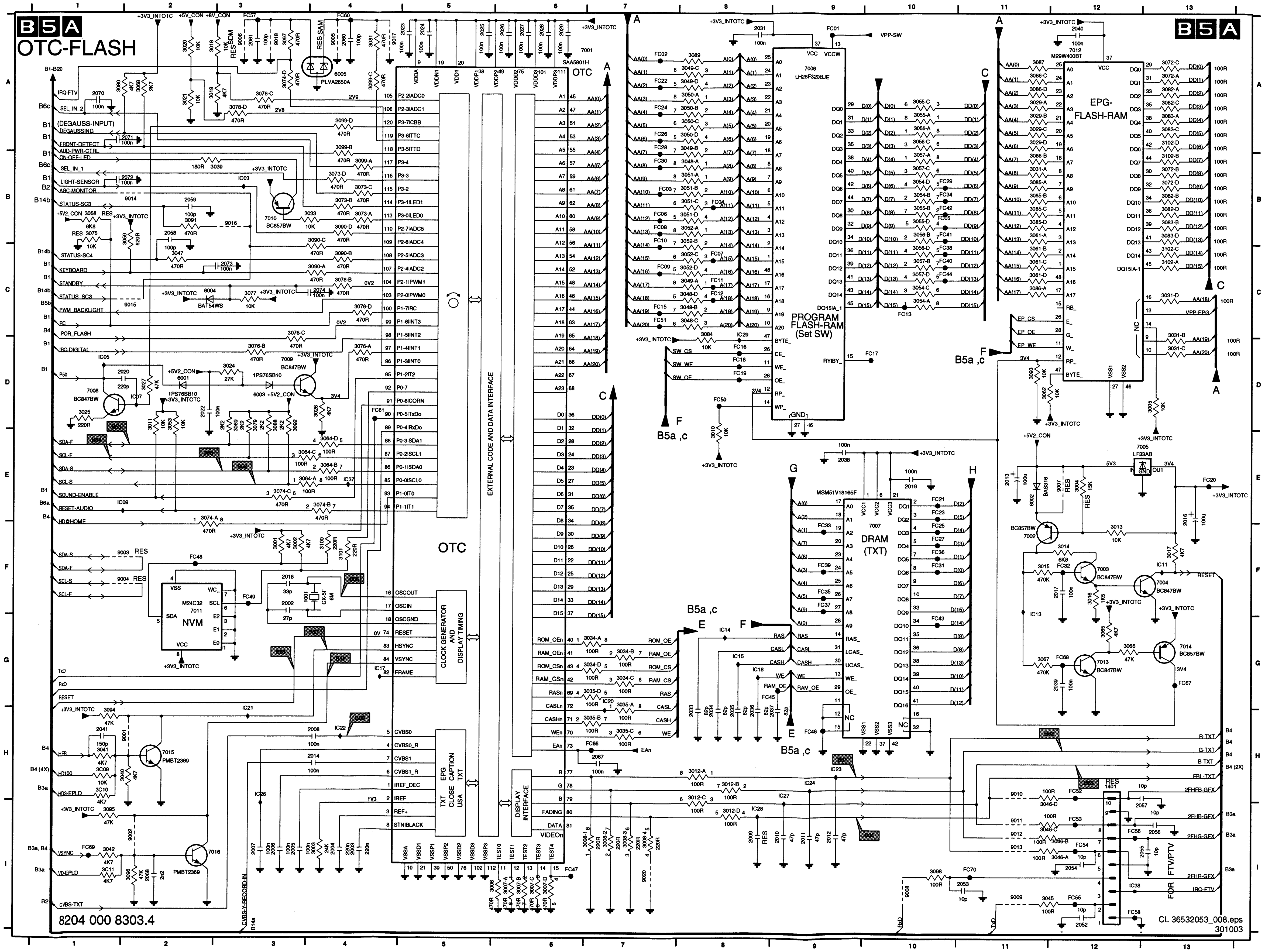

B4
HOP (NOT USED, unless otherwise indicated)
B4
B1 ➜ B20
TOPIC
(OPTIONAL)
7302
TDA9178
LUMA PROCESSING
CHROMA PROCESSING
SPEC-TRAL PROC
CONTROL
ADC
WIN-DOW
ONLY FOR NO HOP
7301
TDA9330
SWITCH
SATUR'N CONTROL COLOUR DIFF MATRIX
CONTRAST AND BRIGHTNESS CONTROL
RGB-INSERTION
WHITE POINT CONTROL
OUTPUT AMPL + BUFFER + BLUE STRETCH
RGB-YUV MATRIX
BLACK STRETCH
PWL + BEAM CURR LIMITER
CONTIN'S CATHODE CALIBR'N
I²C
HOP
6-BITS DAC
SYNC+GEO
RGB
BANDGAP
ANAGND
DIGSUP
DIGGND
SUPPLY
EW
FRAME
RAMP GENERATOR
PHI-2
PHI-1
Hsel
START/STOP H-DRIVE
SAT
CONTR
BRIGHT
WHITE P.
N.C.
ONLY FOR NO HOP
UL ONLY
USED
R-CRT
G-CRT
B-CRT
GND-RGB-CRT
CUTOFF
EHT-INFO
TILT
EW-DRIVE
HFB_X-RAY-PROT
ANTI-MOIRE
FRAMEDRIVE-
VSYNC
NOHOP1B
FRAMEDRIVE+
HD@HOME
LINEDRIVE1
GND-LINEDRIVE
NOHOP2B
+8VS
+5VS
+8V_VDP
+5V_VDP
SANDCASTLE
HFB
HFB_X-RAY-PROT
DYN-FASE-COR
POR
POR_FLASH
TILT

8204 000 8304.4

CL 36532053_007.eps
301003

1301	G4
1304	H3
2301	C2
2303	F9
2304	G7
2306	I9
2307	F4
2308	G9
2309	E3
2310	E3
2311	I5
2312	G9
2313	F9
2314	F2
2315	F3
2317	F3
2318	F3
2319	G10
2320	G3
2321	C3
2323	B4
2324	I6
2325	H5
2326	F12
2328	B7
2329	B6
2330	B6
2331	B6
2332	F2
2333	E10
2334	E8
2335	G11
2336	E9
2337	B12
2338	C12
2340	J11
2341	D12
2342	B7
2343	B9
2344	I3
2345	I2
2346	I2
2347	I2
2348	I2
2349	I2
2363	G3
2386	G12
2393	E13
2395	D3
2396	D3
2397	D3
2398	A3
2429	B4
2431	B4
3302	D4
3304	I11
3305	D3
3306	E9
3307	F9
3308	E9
3310	E9
3311	G7
3312	F11
3313	E11
3314	G8
3315	H8
3316	I10
3317	G9
3318	G9
3319	F13
3320	E3
3321	E3
3322	E12
3323	I5
3324	I5
3325	B9
3326	H5
3327	H6
3328	F9
3329	E2
3330	B7
3331	G3
3332	B7
3333	G3
3334	I5
3335	B7
3336	H6
3337	B11
3338	B12
3339	C3
3340	B13
3341	C13
3342	C13
3343	D12
3344	E10
3345	D9
3346	D9
3347	D9
3348	D9
3349	F2
3350	B10
3351	B9
3352	B10
3353	A10
3354	B10
3355	B7
3356	H12
3357	G12
3358	B11
3359	B10
3360	B8
3361	H7
3362	G11
3363	F3
3364-A	G11
3364-B	G11
3364-C	G10
3364-D	H10
3365	G13
3366	H11
3367	F11
3368	F13
3369	C12
3383	B13
3384	D12
3386	G13
3387	G2
3388	B5
3389	C13
3390	E9
3391	G12
3394	E9
3395	D3
3396	D3
3397	D2
3398	D3
3399	B5
3442	E12
3443	E13
3453	D2
3454	C1
3455	C1
3459	B11
3465	B9
3467	B8
3470	B8
3471	B8
3472	I6
5301	E2
5302	F2
5303	H1
5304	H1
5305	H1
5306	H1
5307	H1
5308	I1
5313	B12
5314	C12
5315	D12
6301	E12
6303	H9
6304	H9
6306	I5
6307	I5
6308	C2
6309	E11
6310	E10
6311	E12
6312	H8
6313	I9
6314	I9
6316	D9
6317	F12
6319	E9
6334	I5
7301	C4
7302	B1
7303	H8
7304	G2
7305	C9
7306	B9
7309	G13
7310-A	G11
7310-B	H12
7312	G10
7313	B11
7314	B10
7315	B10
7316	B12
7317	C12
7318	E10
7319	C12
7340	B6
7361	I7
7362	H7
7375	B8
9302	B3
9303	B4
9304	B4
9305	B4
9308	C5
9309	C5
9310	C5
9311	I1
9312	J1
9313	F13
9314	I1
9315	I1
9421	C9
C001	H12
F309	D11
F311	D2
F312	F9
F329	H9
F347	E12
F348	H3
F349	H3
F350	H3
F351	H3
F352	H3
F353	I3
F362	I3
F364	G4
I302	F2
I303	F4
I304	B12
I305	G5
I306	G5
I307	G7
I308	B12
I309	C12
I310	C12
I311	D8
I312	F3
I313	D12
I314	D9
I315	D8
I316	E9
I317	D12
I319	B11
I320	B11
I321	G3
I326	C7
I330	B4
I331	B4
I332	B3
I333	C2
I338	E3
I339	F4
I357	E8
I358	E4
I359	F4
I363	I5
I365	E10
I366	C3
I367	E10
I368	B7
I369	B8
I370	B10
I371	I12
c200	F3

SSB (AA): OTC-Flash



1001	F4
1401	H12
2002	F3
2003	I4
2004	I4
2005	I3
2006	I3
2007	I3
2008	H4
2009	I8
2010	I9
2011	I9
2012	I9
2013	E11
2014	H4
2016	E13
2017	F12
2018	F3
2019	E10
2020	D2
2022	D2
2023	A5
2024	A5
2025	A5
2026	A6
2027	A6
2028	A6
2029	A6
2031	A8
2033	H8
2034	H8
2035	H8
2036	H8
2037	H9
2038	E9
2039	G12
2040	A12
2041	H1
2052	I12
2053	I11
2054	I12
2055	I13
2056	I13
2057	I13
2058	B2
2059	B2
2060	A4
2061	A3
2067	H7
2068	I2
2070	A1
2071	A2
2072	B2
2073	C3
2074	C4
3001	F3
3002	F3
3003	I4
3004	E12
3005	D13
3006	I6
3007-A	I6
3007-B	I6
3007-C	I6
3007-D	I6
3008-A	I7
3008-B	I7
3008-C	I7
3008-D	I7
3010	E8
3011	D2
3012-A	H8
3012-B	H8
3012-C	H8
3012-D	I8
3013	F12
3014	F12
3015	F11
3016	F12
3017	F13
3018	A2
3019	A2
3020	A2
3021	A2
3024	D3
3025	D1
3026	D4
3027	D2
3029-A	A11
3029-B	A11
3029-C	A11
3029-D	A11
3031-A	B11
3031-B	C13
3031-C	D13
3031-D	C13
3033	B4
3034-A	G7
3034-B	G7
3034-C	G7
3034-D	G7
3035-A	G7
3035-B	H7
3035-C	H7
3035-D	G7
3039	B2
3040	H2
3041	H1
3042	I1
3045	I12
3046-A	I12
3046-B	I12
3046-C	I12
3046-D	I12
3047	C2
3048-A	B8
3048-B	C8
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3049-A	C8
3049-B	A8
3049-C	A8
3049-D	A8
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3050-C	A8
3050-D	A8
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3051-B	B8
3051-C	B8
3051-D	B8
3052-A	B8
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3052-D	C8
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3054-B	B10
3054-C	C10
3054-D	B10
3055-A	A10
3055-B	B10
3055-C	A10
3055-D	B10
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3056-B	B10
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3056-D	C10
3057-A	B10
3057-B	C10
3057-C	B10
3057-D	C10
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3061-B	C11
3061-C	C11
3061-D	C11
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3064-D	E4
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3072-D	B13
3073-A	B4
3073-B	B4
3073-C	B4
3073-D	B4
3074-A	E2
3074-B	E4
3074-C	E3
3074-D	A3
3075	B1
3076-A	D4
3076-B	D3
3076-C	C3
3076-D	C4
3077	C3
3078-B	C4
3078-C	A3
3078-D	A3
3079	D3
3080	A1
3081	A4
3082-A	A13
3082-B	B13
3082-C	A13
3082-D	B13
3083-A	A13
3083-B	B13
3083-C	A13
3083-D	B13
3084	C8
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3085-D	B11
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3086-D	A11
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3088	D3
3089	A8
3090-A	C4
3090-B	C4
3090-C	B4
3090-D	B4
3091	B2
3092	D3
3093	D11
3094	H1
3095	I1
3096	I2
3097	A3
3098	I10
3099-A	B4
3099-B	A4
3099-C	A4
3099-D	A4
3100	F4
3101	F4
3102-A	C13
3102-B	B13
3102-C	C13
3102-D	A13
3C09	H1
3C10	H1
3C11	I1
6001	D2
6002	E11
6003	D3
6004	C2
6005	A4
7001	A6
7002	F11
7003	F12
7004	F13
7005	E13
7006	A9
7007	F10
7008	D1
7009	D3
7010	B3
7011	F2
7012	A12
7013	G12
7014	G13
7015	H2
7016	I2
9001	H2
9002	I2
9003	F2
9004	F2
9005	A4
9006	A3
9007	E12
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9009	I11
9010	H11
9011	I11
9012	I11
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9015	C2
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9018	A3
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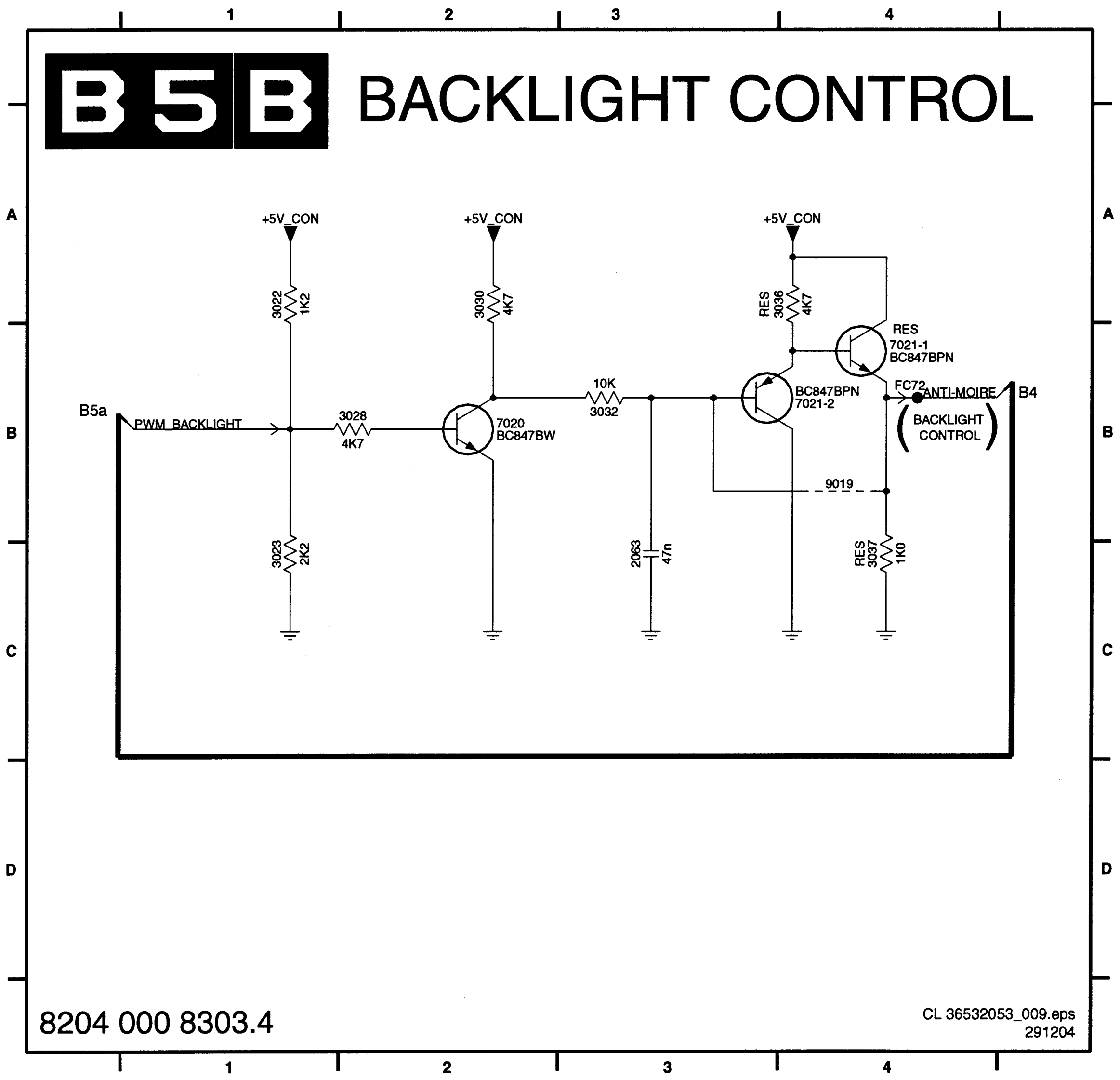
FC01	A9
FC02	A7
FC03	B7
FC04	B8
FC05	B10
FC06	B7
FC07	C8
FC08	B7
FC09	C7
FC10	B7
FC11	C8
FC12	C8
FC13	C10
FC15	C7
FC16	D8
FC17	D10
FC18	D8
FC19	D8
FC20	E13
FC21	E10
FC22	A7
FC23	E10
FC24	A7
FC25	F10
FC26	A7
FC27	F10
FC28	A7
FC29	B10
FC30	B7
FC31	F10
FC32	F12
FC33	F9
FC34	B10
FC35	F9
FC36	F10
FC37	F9
FC38	C10
FC39	F9
FC40	C10
FC41	B10
FC42	B10
FC43	G10
FC44	C10
FC45	G8
FC46	H9
FC47	I6
FC48	F2
FC49	F3
FC50	D8
FC51	C7
FC52	H12
FC53	I12
FC54	I12
FC55	I12
FC56	I12
FC57	A3
FC58	I12
FC60	A4
FC61	D4
FC66	H7
FC67	G13
FC68	G12
FC69	I1
FC70	I11
IC03	B3
IC05	D1
IC07	D2
IC09	E2
IC11	F13
IC13	F11
IC14	G8
IC15	G8
IC17	G4
IC18	G8
IC20	G7
IC21	H3
IC22	H4
IC23	H9
IC24	H9
IC26	H3
IC27	H9
IC28	I8
IC29	C8
IC37	E4
IC38	I12

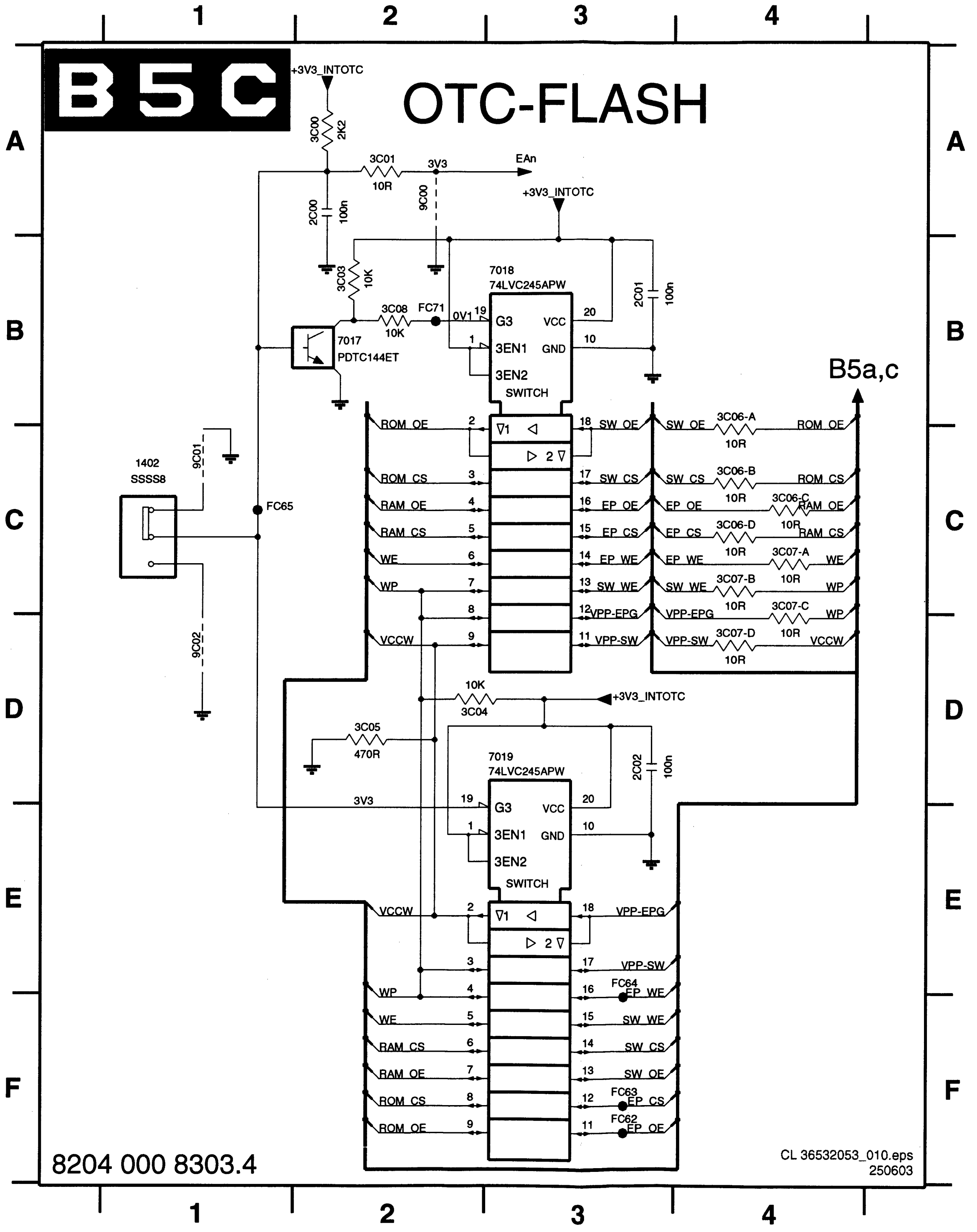
SSB (AA): Backlight Control

2063 C3	3023 C1	3030 A2	3036 A4	7020 B2	7021-2 B4
3022 A1	3028 B2	3032 B3	3037 C4	7021-1 B4	9019 B4

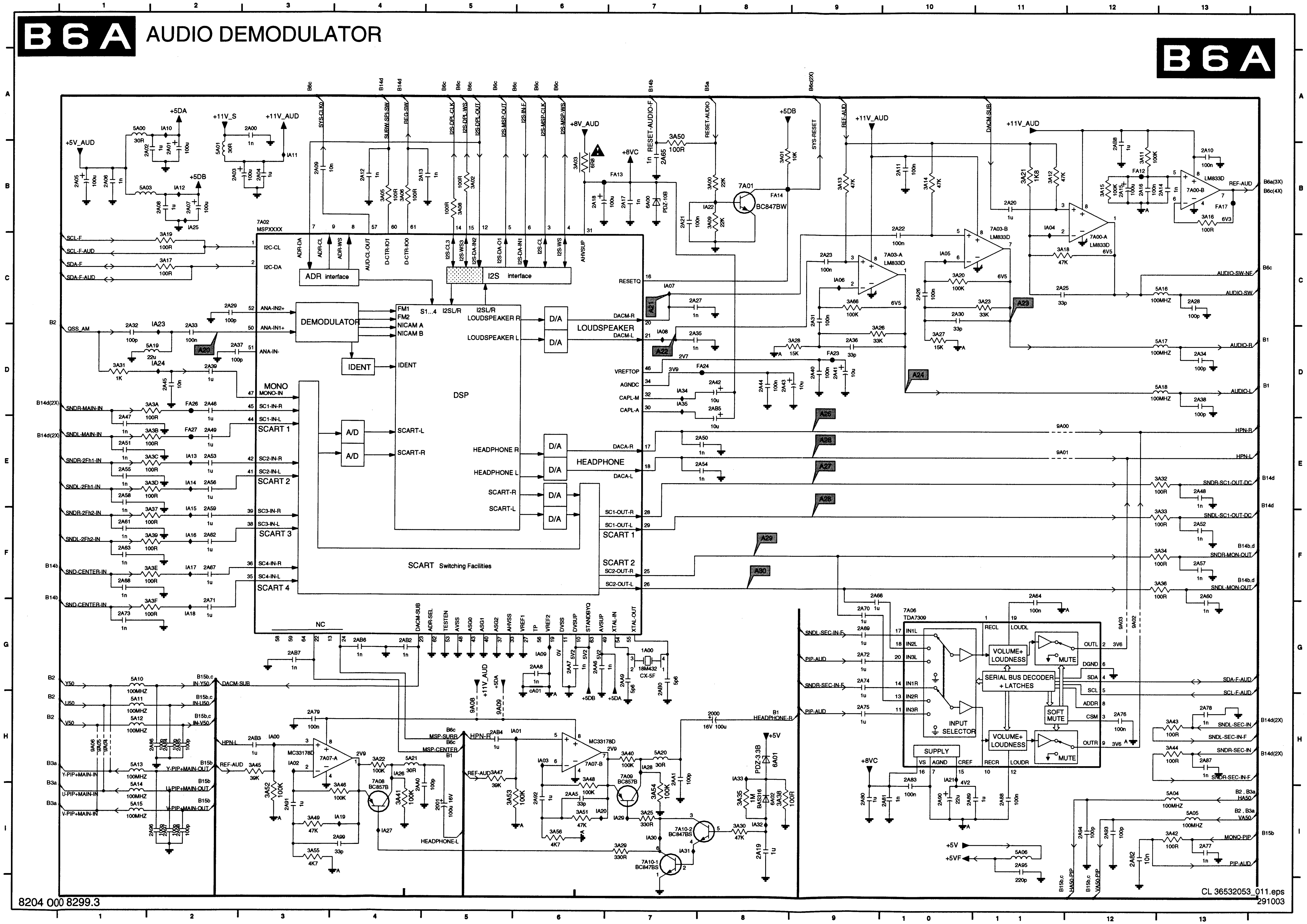

B5B
BACKLIGHT CONTROL
1
2
3
4
A
B
C
D
+5V_CON
+5V_CON
+5V_CON
3022 1K2
3030 4K7
RES 3036 4K7
RES 7021-1 BC847BPN
BC847BPN 7021-2
10K 3032
B5a
PWM_BACKLIGHT
3028 4K7
7020 BC847BW
FC72
ANTI-MOIRE
B4
BACKLIGHT CONTROL
9019
3023 2K2
2063 47n
RES 3037 1K0
8204 000 8303.4
CL 36532053_009.eps
291204

SSB (AA): OTC-Flash

1402 C1	2C02 D3	3C03 B2	3C06-A B4	3C06-D C4	3C07-C C4	7017 B2	9C00 A2	FC62 F3	FC65 C1
2C00 A2	3C00 A2	3C04 D2	3C06-B C4	3C07-A C4	3C07-D D4	7018 B3	9C01 C1	FC63 F3	FC71 B2
2C01 B3	3C01 A2	3C05 D2	3C06-C C4	3C07-B C4	3C08 B2	7019 D3	9C02 D1	FC64 E3	

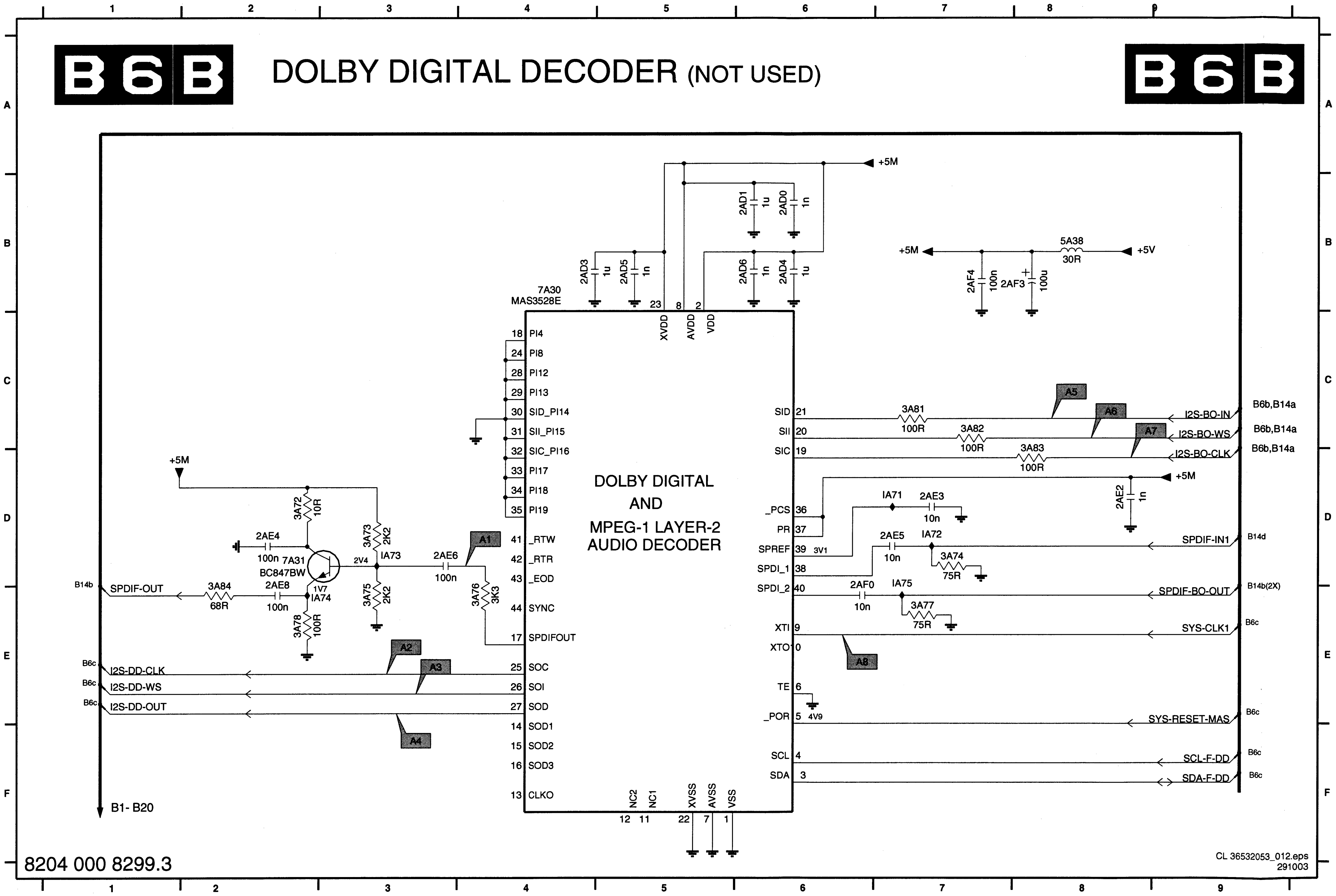

B5C
OTC-FLASH
1
2
3
4
A
B
C
D
E
F
+3V3_INTOTC
3C00 2K2
3C01 10R
3V3
EAn
2C00 100n
9C00
+3V3_INTOTC
3C03 10K
3C08 10K
FC71
0V1
7017 PDTC144ET
7018 74LVC245APW
G3
VCC
3EN1
GND
3EN2
SWITCH
2C01 100n
B5a,c
1402 SSSS8
9C01
FC65
9C02
ROM_OE
ROM_CS
RAM_OE
RAM_CS
WE
WP
VCCW
SW_OE
SW_CS
EP_OE
EP_CS
EP_WE
SW_WE
VPP-EPG
VPP-SW
3C06-A 10R
3C06-B 10R
3C06-C 10R
3C06-D 10R
3C07-A 10R
3C07-B 10R
3C07-C 10R
3C07-D 10R
10K 3C04
+3V3_INTOTC
3C05 470R
7019 74LVC245APW
2C02 100n
3V3
FC64
FC63
FC62
8204 000 8303.4
CL 36532053_010.eps
250603

SSB (AA): Audio Demodulator


B6A
AUDIO DEMODULATOR
B6A
7A02 MSPXXXX
ADR interface
I2S interface
DEMODULATOR
IDENT
DSP
LOUDSPEAKER
HEADPHONE
MONO
SCART 1
SCART 2
SCART 3
SCART 4
SCART Switching Facilities
A/D
D/A
7A06 TDA7309
INPUT SELECTOR
VOLUME+ LOUDNESS
SERIAL BUS DECODER + LATCHES
SOFT MUTE
MUTE
SUPPLY
7A00-A LM833D
7A00-B LM833D
7A03-A LM833D
7A03-B LM833D
7A01 BC847BW
7A07-A MC33178D
7A07-B MC33178D
7A08 BC857B
7A09 BC857B
7A10-1 BC847BS
7A10-2 BC847BS
+5V_AUD
+5DA
+11V_S
+11V_AUD
+5DB
+8V_AUD
+8VC
+5V
+5VF
SCL-F
SCL-F-AUD
SDA-F
SDA-F-AUD
QSS_AM
SNDR-MAIN-IN
SNDL-MAIN-IN
SNDR-2Fh1-IN
SNDL-2Fh1-IN
SNDR-2Fh2-IN
SNDL-2Fh2-IN
SND-CENTER-IN
REF-AUD
AUDIO-SW-NF
AUDIO-SW
AUDIO-R
AUDIO-L
HPN-R
HPN-L
SNDR-SC1-OUT-DC
SNDL-SC1-OUT-DC
SNDR-MON-OUT
SNDL-MON-OUT
SNDL-SEC-IN-F
PIP-AUD
SNDR-SEC-IN-F
DACM-SUB
HEADPHONE-R
HEADPHONE-L
MSP-SUBB
MSP-CENTER
MONO-PIP
1A00 18M432 CX-5F
8204 000 8299.3
CL 36532053_011.eps
291003

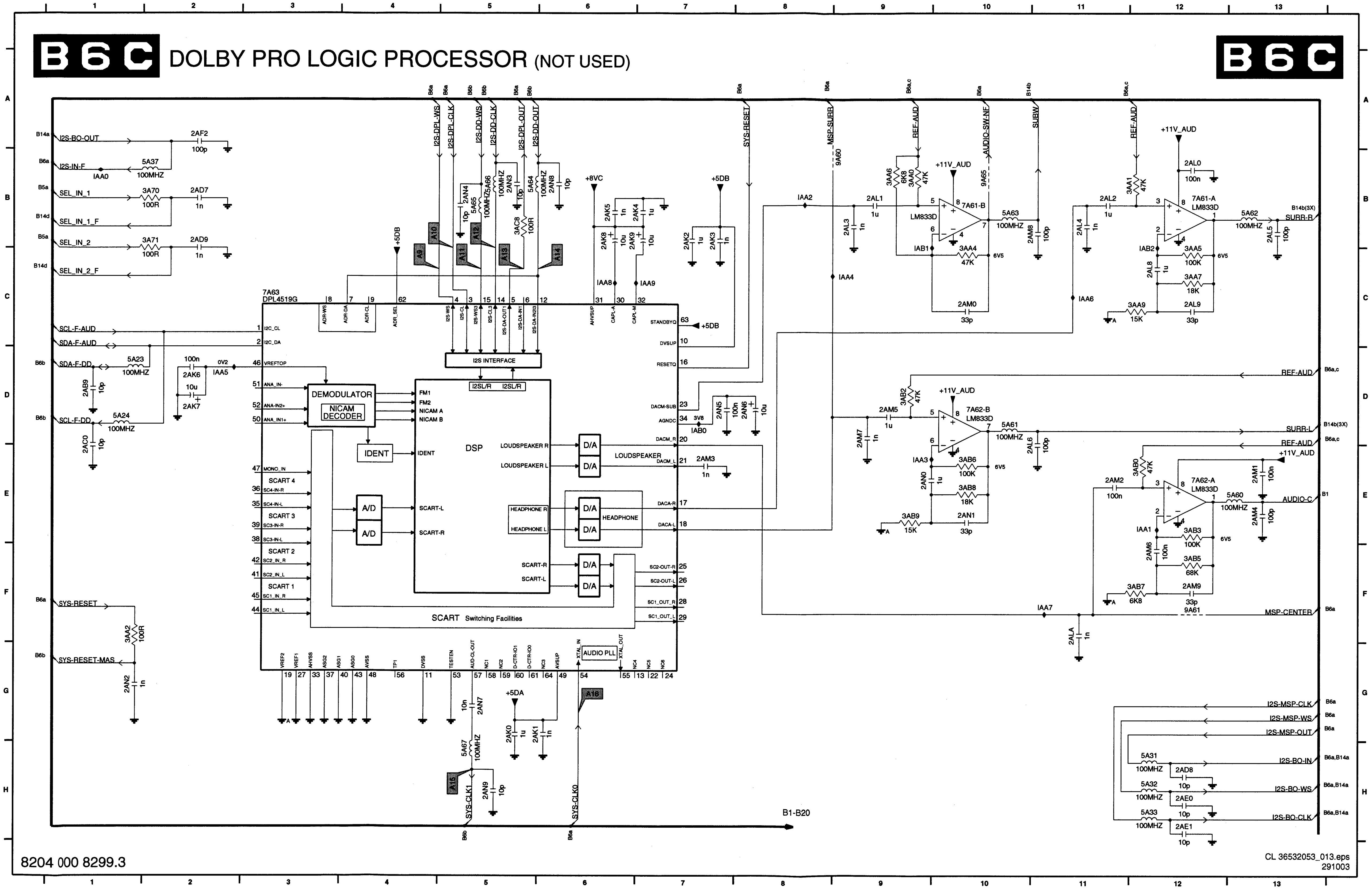
1A00 G7
2A00 A3
2A01 B2
2A02 B1
2A03 B2
2A04 B3
2A05 B1
2A06 B1
2A07 B2
2A08 B2
2A09 B3
2A10 B13
2A11 B10
2A12 B4
2A13 B4
2A14 B13
2A15 B12
2A16 B12
2A17 B7
2A18 B6
2A19 I8
2A20 B11
2A21 B7
2A22 B10
2A23 C9
2A25 C11
2A26 C10
2A27 C7
2A28 C13
2A29 C2
2A30 C10
2A31 C9
2A32 D1
2A33 D2
2A34 D13
2A35 D7
2A36 D9
2A37 D2
2A38 D13
2A39 D2
2A40 D9
2A41 D9
2A42 D8
2A43 D8
2A44 D8
2A45 D2
2A46 D2
2A47 E1
2A48 E13
2A49 E2
2A50 E8
2A51 E1
2A52 F13
2A53 E2
2A54 E8
2A55 E1
2A56 E2
2A57 F13
2A58 E1
2A59 F2
2A60 F13
2A61 F1
2A62 F2
2A63 F1
2A64 F11
2A65 B7
2A66 F9
2A67 F2
2A68 F1
2A69 G9
2A70 G9
2A71 G2
2A72 G9
2A73 G1
2A74 G9
2A75 H9
2A76 H12
2A77 I13
2A78 H13
2A79 H3
2A80 I9
2A81 I10
2A82 I12
2A83 H10
2A84 H2
2A85 H2
2A86 H2
2A87 H13
2A88 I11
2A89 I10
2A90 I10
2A91 I3
2A92 I6
2A93 I12
2A94 I12
2A95 I11
2A96 I2
2A97 I2
2A98 I2
2A99 I4
2AA0 I5
2AA1 H7
2AA5 I6
2AA6 G6
2AA7 G6
2AA8 G6
2AA9 G7
2AB0 G7
2AB2 G4
2AB3 H3
2AB4 H5
2AB5 D8
2AB6 G4
2AB7 G3
2AB8 B12
3A00 B8
3A01 B8
3A02 B5
3A03 B6
3A05 B4
3A06 B4
3A08 B5
3A09 B8
3A11 B12
3A12 B11
3A13 B9
3A14 B10
3A15 B12
3A16 B13
3A17 C2
3A18 C11
3A19 C2
3A20 C10
3A21 B11
3A22 H4
3A23 C11
3A25 I7
3A26 D9
3A27 D10
3A28 D9
3A29 I7
3A30 I8
3A31 D1
3A32 E13
3A33 F13
3A34 F13
3A35 I8
3A36 F13
3A37 F2
3A38 I8
3A39 F2
3A3A D2
3A3B E2
3A3C E2
3A3D E2
3A3E F2
3A3F G2
3A40 H7
3A41 I4
3A42 I13
3A43 H13
3A44 H13
3A45 H3
3A46 I4
3A47 H5
3A48 H6
3A49 I3
3A50 A7
3A51 I6
3A52 I3
3A53 I5
3A54 I7
3A55 I3
3A56 I6
3A66 C9
5A00 A1
5A01 B2
5A03 B1
5A04 I13
5A05 I13
5A06 I11
5A10 G1
5A11 H1
5A12 H1
5A13 H1
5A14 I1
5A15 I1
5A16 C13
5A17 D13
5A18 D13
5A19 D2
5A20 H7
5A21 H4
6A00 B7
6A01 H8
6A02 I8
7A00-A C12
7A00-B B13
7A01 B8
7A02 B3
7A03-A C10
7A03-B B11
7A06 G10
7A07-A H3
7A07-B H6
7A08 I4
7A09 H7
7A10-1 I7
7A10-2 I7
9A00 E11
9A01 E11
9A02 G12
9A03 G12
9A04 H1
9A05 H1
9A06 H1
9A08 H5
9A09 H5
FA12 B12
FA13 B7
FA14 B8
FA17 B13
FA23 D9
FA24 D8
FA26 D2
FA27 E2
IA00 H3
IA01 H6
IA02 H3
IA03 H6
IA04 B11
IA05 C10
IA06 C9
IA07 C7
IA08 D7
IA09 G6
IA10 A2
IA11 B3
IA12 B2
IA13 E2
IA14 E2
IA15 F2
IA16 F2
IA17 F2
IA18 G2
IA19 I4
IA20 I6
IA21 H10
IA22 B8
IA23 D2
IA24 D2
IA25 B2
IA26 H4
IA27 I4
IA28 H7
IA29 I7
IA30 I7
IA31 I7
IA32 I8
IA33 H8
cA01 H6

SSB (AA): Dolby Digital Decoder


B6B
DOLBY DIGITAL DECODER (NOT USED)
7A30
MAS3528E
DOLBY DIGITAL
AND
MPEG-1 LAYER-2
AUDIO DECODER
XVDD
AVDD
VDD
PI4
PI8
PI12
PI13
SID_PI14
SII_PI15
SIC_PI16
PI17
PI18
PI19
_RTW
_RTR
_EOD
SYNC
SPDIFOUT
SOC
SOI
SOD
SOD1
SOD2
SOD3
CLKO
NC2
NC1
XVSS
AVSS
VSS
SID
SII
SIC
_PCS
PR
SPREF
SPDI_1
SPDI_2
XTI
XTO
TE
_POR
SCL
SDA
+5M
+5V
5A38
30R
2AF4
100n
2AF3
100u
2AD1
1u
2AD0
1n
2AD3
2AD5
2AD6
2AD4
3A81
100R
3A82
100R
3A83
100R
2AE2
1n
IA71
2AE3
10n
2AE5
IA72
3A74
75R
2AF0
IA75
3A77
75R
3V1
4V9
I2S-BO-IN
I2S-BO-WS
I2S-BO-CLK
B6b,B14a
SPDIF-IN1
B14d
SPDIF-BO-OUT
B14b(2X)
SYS-CLK1
B6c
SYS-RESET-MAS
SCL-F-DD
SDA-F-DD
A1
A2
A3
A4
A5
A6
A7
A8
3A72
10R
2AE4
100n
7A31
BC847BW
3A73
2K2
IA73
2V4
2AE6
100n
3A76
3K3
1V7
IA74
3A75
2K2
3A84
68R
2AE8
100n
3A78
100R
B14b
SPDIF-OUT
B6c
I2S-DD-CLK
I2S-DD-WS
I2S-DD-OUT
B1- B20
8204 000 8299.3
CL 36532053_012.eps
291003

2AD0	B6
2AD1	B6
2AD3	B4
2AD4	B6
2AD5	B5
2AD6	B6
2AE2	D8
2AE3	D7
2AE4	D2
2AE5	D7
2AE6	D3
2AE8	E2
2AF0	E6
2AF3	B7
2AF4	B7
3A72	D2
3A73	D3
3A74	D7
3A75	E3
3A76	E4
3A77	E7
3A78	E2
3A81	C7
3A82	C7
3A83	D8
3A84	E2
5A38	B8
7A30	B4
7A31	D2
IA71	D7
IA72	D7
IA73	D3
IA74	E3
IA75	D7

SSB (AA): Dolby Pro Logic Processor



B6C DOLBY PRO LOGIC PROCESSOR (NOT USED)

8204 000 8299.3

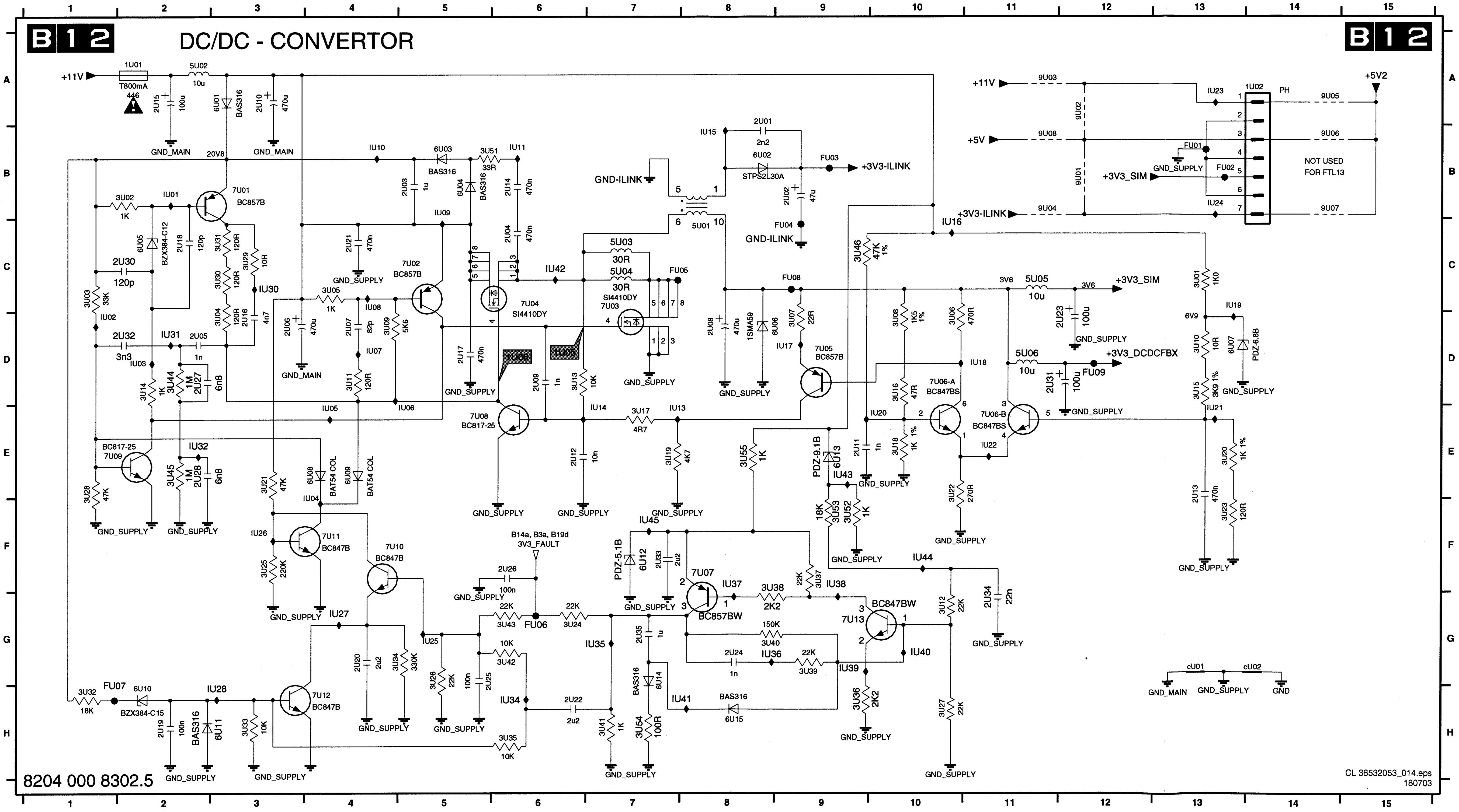
CL 36532053_013.eps
291003

B6C
7A63
DPL4519G
I2S-BO-OUT
I2S-IN-F
SEL_IN_1
SEL_IN_1_F
SEL_IN_2
SEL_IN_2_F
SCL-F-AUD
SDA-F-AUD
SDA-F-DD
SCL-F-DD
SYS-RESET
SYS-RESET-MAS
I2S-DPL-WS
I2S-DPL-CLK
I2S-DD-WS
I2S-DD-CLK
I2S-DPL-OUT
I2S-DD-OUT
SYS-RESET
MSP-SURR
REF-AUD
AUDIO-SW-NF
SURW
+8VC
+5DB
+5DA
+11V_AUD
I2S INTERFACE
DEMODULATOR
NICAM DECODER
IDENT
DSP
A/D
D/A
LOUDSPEAKER
HEADPHONE
SCART Switching Facilities
AUDIO PLL
7A61-A LM833D
7A61-B LM833D
7A62-A LM833D
7A62-B LM833D
SURR-R
SURR-L
REF-AUD
AUDIO-C
MSP-CENTER
I2S-MSP-CLK
I2S-MSP-WS
I2S-MSP-OUT
I2S-BO-IN
I2S-BO-WS
I2S-BO-CLK
SYS-CLK1
SYS-CLK0
B1-B20

2AB9	D1
2AC0	E1
2AD7	B2
2AD8	H12
2AD9	B2
2AE0	H12
2AE1	H12
2AF2	A2
2AK0	G5
2AK1	G6
2AK2	B7
2AK3	B7
2AK4	B7
2AK5	B6
2AK6	D2
2AK7	D2
2AK8	B6
2AK9	B6
2AL0	B12
2AL1	B9
2AL2	B11
2AL3	B9
2AL4	B11
2AL5	B13
2AL6	E11
2AL8	C12
2AL9	C12
2ALA	F11
2AM0	C10
2AM1	E13
2AM2	E11
2AM3	E7
2AM4	E13
2AM5	D9
2AM6	F12
2AM7	D9
2AM8	B11
2AM9	F12
2AN0	E9
2AN1	E10
2AN2	G1
2AN3	B5
2AN4	B5
2AN5	D7
2AN6	D8
2AN7	G5
2AN8	B6
2AN9	H5
3A70	B2
3A71	B2
3AA0	B9
3AA1	B12
3AA2	F1
3AA4	C10
3AA5	C12
3AA6	B9
3AA7	C12
3AA9	C12
3AB0	E12
3AB2	D9
3AB3	E12
3AB5	F12
3AB6	E10
3AB7	F12
3AB8	E10
3AB9	E9
3AC8	B5
5A23	D1
5A24	D1
5A31	H12
5A32	H12
5A33	H12
5A37	B2
5A60	E13
5A61	D10
5A62	B13
5A63	B10
5A64	B5
5A65	B5
5A66	B5
5A67	H5
7A61-A	B12
7A61-B	B10
7A62-A	E12
7A62-B	D10
7A63	C3
9A60	B9
9A61	F12
9A65	B10
IAA0	B1
IAA1	E12
IAA2	B8
IAA3	E9
IAA4	C9
IAA5	D2
IAA6	C11
IAA7	F11
IAA8	C6
IAA9	C7
IAB0	D7
IAB1	C9
IAB2	C12

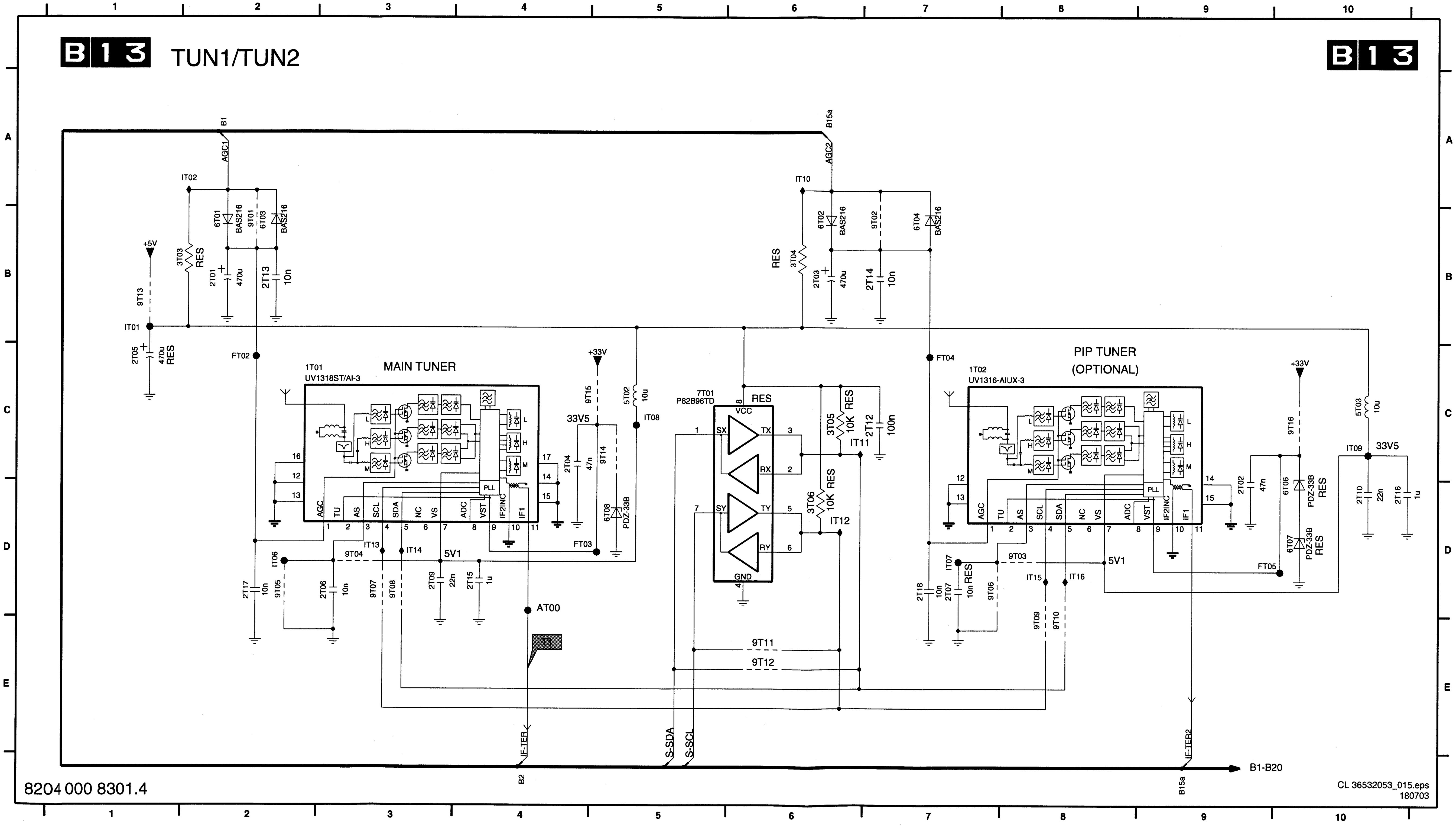
SSB (AA): DC/DC-Convertor

1U01 A2
1U02 A13
2U01 A8
2U02 B9
2U03 B5
2U04 C6
2U05 D2
2U06 D3
2U07 D4
2U08 D8
2U09 D6
2U10 A3
2U11 E9
2U12 E6
2U13 E13
2U14 B6
2U15 A2
2U16 D3
2U17 D5
2U18 C2
2U19 H2
2U20 G4
2U21 C4
2U22 H6
2U23 D12
2U24 G8
2U25 G5
2U26 F6
2U27 D2
2U28 E2
2U30 C2
2U31 D11
2U32 D2
2U33 F7
2U34 G11
2U35 G7
3U01 C13
3U02 B2
3U03 C1
3U04 D3
3U05 C4
3U06 D10
3U07 D9
3U08 D10
3U09 D4
3U10 D13
3U11 D4
3U12 G10
3U13 D6
3U14 D2
3U15 D13
3U16 D10
3U17 E7
3U18 E10
3U19 E7
3U20 E13
3U21 E3
3U22 E10
3U23 F13
3U24 G6
3U25 F3
3U26 G5
3U27 H10
3U28 E1
3U29 C3
3U30 C3
3U31 C3
3U32 H1
3U33 H3
3U34 G5
3U35 H6
3U36 H9
3U37 F9
3U38 F8
3U39 G9
3U40 G8
3U41 H7
3U42 G6
3U43 G6
3U44 D2
3U45 E2
3U46 C9
3U51 B5
3U52 F9
3U53 F9
3U54 H7
3U55 E8
5U01 C8
5U02 A2
5U03 C7
5U04 C7
5U05 C11
5U06 D11
6U01 A3
6U02 B8
6U03 B5
6U04 B5
6U05 C2
6U06 D8
6U07 D13
6U08 E4
6U09 E4
6U10 H2
6U11 H3
6U12 F7
6U13 E9
6U14 G7
6U15 H8
7U01 B3
7U02 C5
7U03 C7
7U04 C6
7U05 D9
7U06-A D10
7U06-B E11
7U07 F8
7U08 E5
7U09 E1
7U10 F5
7U11 F4
7U12 H4
7U13 G9
9U01 B12
9U02 A12
9U03 A11
9U04 B11
9U05 A14
9U06 B14
9U07 B14
9U08 B11
FU01 B13
FU02 B13
FU03 B9
FU04 C9
FU05 C7
FU06 G6
FU07 H1
FU08 C9
FU09 D12
IU01 B2
IU02 D1
IU03 D2
IU04 E4
IU05 E4
IU06 E5
IU07 D4
IU08 C4
IU09 B5
IU10 B4
IU11 B6
IU13 E7
IU14 E7
IU15 B8
IU16 C10
IU17 D9
IU18 D11
IU19 C13
IU20 E10
IU21 E13
IU22 E11
IU23 A13
IU24 B13
IU25 G5
IU26 F3
IU27 G4
IU28 H3
IU30 C3
IU31 D2
IU32 E2
IU34 H6
IU35 G7
IU36 G8
IU37 F8
IU38 F9
IU39 G9
IU40 G10
IU41 H8
IU42 C6
IU43 E9
IU44 F10
IU45 F7
cU01 G13
cU02 G14

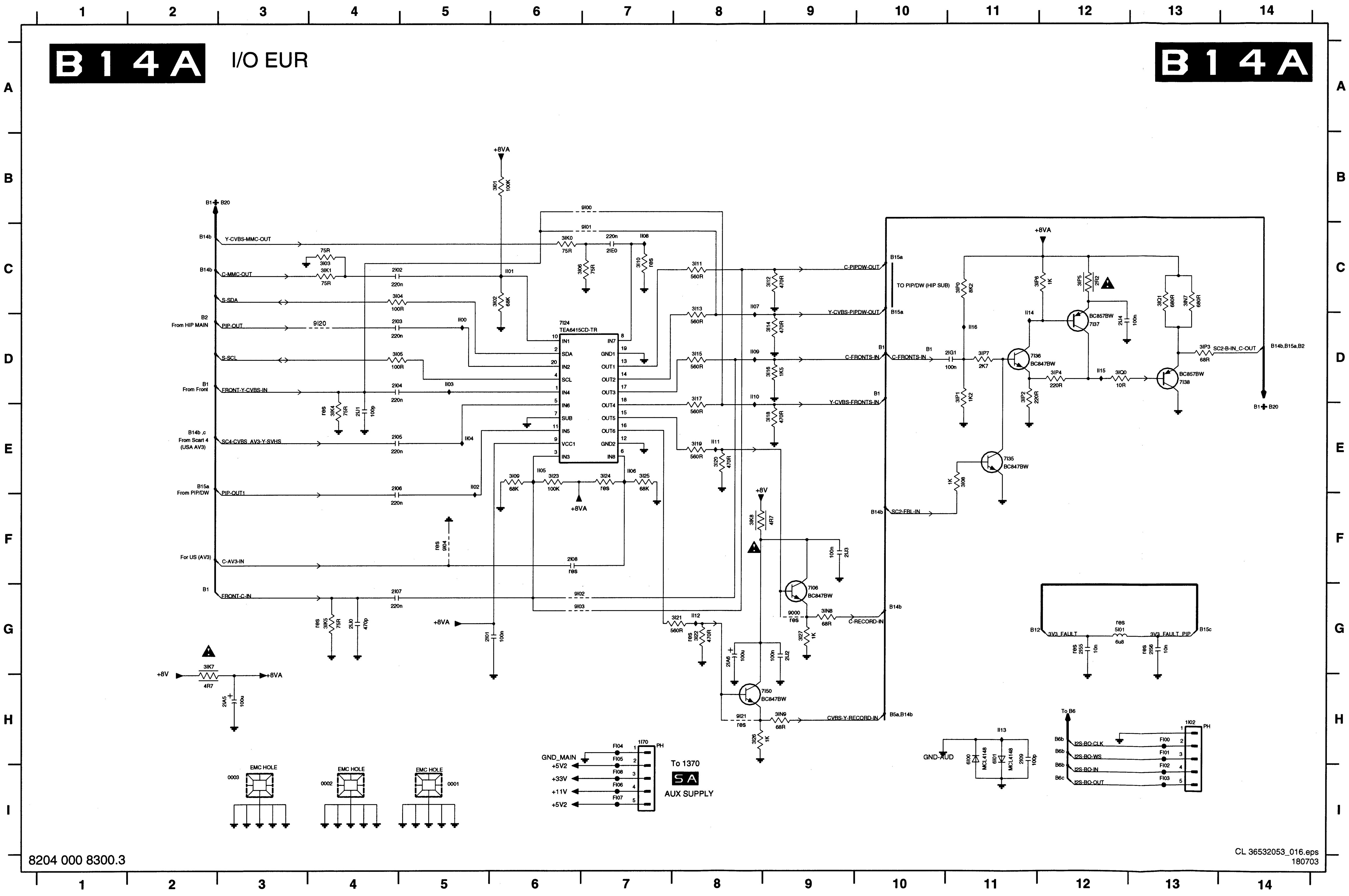

B12
DC/DC - CONVERTOR
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H
+11V
1U01
T800mA
446
5U02
10u
2U15 100u
6U01 BAS316
2U10 470u
GND_MAIN
20V8
7U01 BC857B
3U02 1K
IU01
6U05 BZX384-C12
2U18 120p
3U31 120R
3U29 10R
3U30 120R
3U04 120R
2U16 4n7
IU30
2U30 120p
3U03 33K
IU02
2U32 3n3
IU03
IU31
2U05 1n
3U14 1K
3U44 1M
2U27 6n8
7U09 BC817-25
IU32
3U28 47K
3U45 1M
2U28 6n8
GND_SUPPLY
IU10
6U03 BAS316
3U51 33R
IU11
2U03 1u
6U04 BAS316
2U14 470n
IU09
2U21 470n
7U02 BC857B
3U05 1K
IU08
2U06 470u
2U07 82p
3U09 5K6
IU07
3U11 120R
IU05
IU06
2U04 470n
7U04 SI4410DY
2U17 470n
1U06
1U05
IU42
5U03 30R
5U04 30R
SI4410DY
7U03
FU05
2U09 1n
3U13 10K
IU14
7U08 BC817-25
3U17 4R7
IU13
2U12 10n
3U19 4K7
3U21 47K
6U08 BAT54 COL
6U09 BAT54 COL
IU04
IU26
7U11 BC847B
3U25 220K
7U10 BC847B
IU27
2U20 2u2
3U34 330K
IU25
3U26 22K
2U25 100n
B14a, B3a, B19d
3V3_FAULT
2U26 100n
22K 3U43
FU06
22K 3U24
10K 3U42
IU34
2U22 2u2
3U35 10K
3U32 18K
FU07
6U10 BZX384-C15
IU28
2U19 100n
6U11 BAS316
3U33 10K
7U12 BC847B
GND-ILINK
IU15
2U01 2n2
6U02 STPS2L30A
FU03
+3V3-ILINK
2U02 47u
5U01
FU04
FU08
2U08 470u
6U06 1SMA59
3U07 22R
IU17
7U05 BC857B
3U46 47K 1%
IU16
3V6
5U05 10u
+3V3_SIM
2U23 100u
3U08 1K5 1%
3U06 470R
IU18
5U06 10u
+3V3_DCDCFBX
2U31 100u
FU09
3U16 47R
7U06-A BC847BS
7U06-B BC847BS
IU20
2U11 1n
3U18 1K 1%
IU22
3U22 270R
3U55 1K
6U13 PDZ-9.1B
IU43
3U53 18K
3U52 1K
IU45
6U12 PDZ-5.1B
2U33 2u2
7U07 BC857BW
IU37
3U38 2K2
3U37 22K
IU38
7U13 BC847BW
IU44
2U34 22n
3U12 22K
IU40
3U40 150K
IU36
2U24 1n
3U39 22K
IU39
2U35 1u
IU35
6U14 BAS316
IU41
6U15 BAS316
3U41 1K
3U54 100R
3U36 2K2
3U27 22K
+11V
9U03
9U02
+5V
9U08
9U01
+3V3_SIM
+3V3-ILINK
9U04
IU23
1U02
PH
9U05
9U06
9U07
FU01
FU02
IU24
+5V2
NOT USED FOR FTL13
3U01 1K0
IU19
6V9
3U10 10R
6U07 PDZ-6.8B
3U15 3K9 1%
IU21
3U20 1K 1%
2U13 470n
3U23 120R
cU01
cU02
GND_MAIN
GND
8204 000 8302.5
CL 36532053_014.eps
180703

SSB (AA): Tun1/Tun2

1T01	C2
1T02	C7
2T01	B2
2T02	D9
2T03	B6
2T04	C4
2T05	C1
2T06	D3
2T07	D7
2T09	D3
2T10	D10
2T12	C7
2T13	B2
2T14	B7
2T15	E3
2T16	D10
2T17	D2
2T18	D7
3T03	B2
3T04	B6
3T05	C6
3T06	D6
5T02	C5
5T03	C10
6T01	B2
6T02	B6
6T03	B2
6T04	B7
6T06	D10
6T07	D10
6T08	D5
7T01	C5
9T01	B2
9T02	B7
9T03	D8
9T04	D3
9T05	D2
9T06	D7
9T07	D3
9T08	D3
9T09	E8
9T10	E8
9T11	E6
9T12	E6
9T13	B1
9T14	C5
9T15	C5
9T16	C10
AT00	D4
FT02	C2
FT03	D4
FT04	C7
FT05	D9
IT01	B1
IT02	A2
IT06	D2
IT07	D7
IT08	C5
IT09	C10
IT10	A6
IT11	C6
IT12	D6
IT13	D3
IT14	D3
IT15	D8
IT16	D8


B13
TUN1/TUN2
B13
MAIN TUNER
1T01
UV1318ST/AI-3
PIP TUNER
(OPTIONAL)
1T02
UV1316-AIUX-3
7T01
P82B96TD
RES
VCC
SX
TX
RX
SY
TY
RY
GND
AGC
TU
AS
SCL
SDA
NC
VS
ADC
VST
IF2INC
IF1
PLL
AGC1
AGC2
B1
B15a
+5V
+33V
33V5
5V1
IT01
IT02
IT06
IT07
IT08
IT09
IT10
IT11
IT12
IT13
IT14
IT15
IT16
FT02
FT03
FT04
FT05
AT00
T1
6T01 BAS216
6T03 BAS216
6T02 BAS216
6T04 BAS216
6T06 PDZ-33B RES
6T07 PDZ-33B RES
6T08 PDZ-33B
3T03 RES
3T04 RES
3T05 10K RES
3T06 10K RES
2T01 470u
2T03 470u
2T05 470u RES
2T13 10n
2T14 10n
2T12 100n
2T04 47n
2T02 47n
2T06 10n
2T07 10n RES
2T09 22n
2T10 22n
2T15 1u
2T16 1u
2T17 10n
2T18 10n
5T02 10u
5T03 10u
9T01
9T02
9T03
9T04
9T05
9T06
9T07
9T08
9T09
9T10
9T11
9T12
9T13
9T14
9T15
9T16
IF-TER
S-SDA
S-SCL
IF-TER2
B2
B15a
B1-B20
8204 000 8301.4
CL 36532053_015.eps
180703
A
B
C
D
E
1
2
3
4
5
6
7
8
9
10

SSB (AA): I/O Eur


B14A
I/O EUR
B14A
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
+8VA
3I01 100K
B1 B20
B14b Y-CVBS-MMC-OUT
B14b C-MMC-OUT
S-SDA
B2 From HIP MAIN PIP-OUT
S-SCL
B1 From Front FRONT-Y-CVBS-IN
B14b,c From Scart 4 (USA AV3) SC4-CVBS_AV3-Y-SVHS
B15a From PIP/DW PIP-OUT1
For US (AV3) C-AV3-IN
B1 FRONT-C-IN
7124 TEA6415CD-TR
IN1 SDA IN2 SCL IN4 IN6 SUB IN5 VCC1 IN3
IN7 GND1 OUT1 OUT2 OUT3 OUT4 OUT5 OUT6 GND2 IN8
C-PIPDW-OUT
Y-CVBS-PIPDW-OUT
C-FRONTS-IN
Y-CVBS-FRONTS-IN
C-RECORD-IN
CVBS-Y-RECORD-IN
B15a
TO PIP/DW (HIP SUB)
B1 C-FRONTS-IN
B14b SC2-FBL-IN
SC2-B-IN_C-OUT
B14b,B15a,B2
B1 B20
7136 BC847BW
7137 BC857BW
7138 BC857BW
7135 BC847BW
7106 BC847BW
7150 BC847BW
+8V
+8V 3IK7 4R7 +8VA
2IA5 100u
+8VA
2I01 100n
B12 3V3_FAULT
res 5I01 6u8
3V3_FAULT_PIP B15c
2I55 10n
2I56 10n
GND_MAIN
+5V2 +33V +11V +5V2
1170 PH
To 1370
5A
AUX SUPPLY
GND-AUD
6I00 MCL4148
6I01 MCL4148
2I09 100p
To B6
B6b I2S-BO-CLK
B6b I2S-BO-WS
B6b I2S-BO-IN
B6c I2S-BO-OUT
1I02 PH
EMC HOLE 0003
EMC HOLE 0002
EMC HOLE 0001
8204 000 8300.3
CL 36532053_016.eps
180703

0001	I5
0002	I4
0003	I3
1I02	H13
1I70	H7
2I01	G5
2I02	C4
2I03	D4
2I04	D4
2I05	E4
2I06	E4
2I07	G4
2I08	F6
2I09	H11
2I55	G12
2I56	G13
2IA5	H3
2IA6	G8
2IE0	C7
2IG1	D11
2IJ0	G4
2IJ1	E4
2IJ2	G9
2IJ3	F9
2IJ4	D12
3I01	B6
3I02	C6
3I03	C4
3I04	C4
3I05	D4
3I06	C6
3I08	E11
3I09	E6
3I10	C7
3I11	C8
3I12	C9
3I13	C8
3I14	D9
3I15	D8
3I16	D9
3I17	D8
3I18	E9
3I19	E8
3I20	E8
3I21	G8
3I22	G8
3I23	E6
3I24	E7
3I25	E7
3I26	H8
3I27	G9
3IK0	C6
3IK1	C4
3IK4	E4
3IK5	G4
3IK7	G2
3IK8	F8
3IN7	C13
3IN8	G9
3IN9	H9
3IP0	C11
3IP1	D11
3IP2	D11
3IP3	D13
3IP4	D12
3IP5	C12
3IP6	C11
3IP7	D11
3IQ0	D12
3IQ1	C13
5I01	G12
6I00	H11
6I01	H11
7I06	G9
7I24	D6
7I35	E11
7I36	D11
7I37	D12
7I38	D13
7I50	H8
9I00	B7
9I01	C7
9I02	G6
9I03	G6
9I04	F5
9I20	D4
9I20	G9
9I21	H8
FI00	H13
FI01	H13
FI02	I13
FI03	I13
FI04	H7
FI05	H7
FI06	I7
FI07	I7
FI08	I7
II00	D5
II01	C6
II02	E5
II03	D5
II04	E5
II05	E6
II06	E7
II07	C8
II08	C7
II09	D8
II10	D8
II11	E8
II12	G8
II13	H11
II14	D11
II15	D12
II16	D11

SSB (AA): I/O Eur

V00 L18
V07 L20
1101-1 B4
1101-2 B9
1101-3 E21
1103 L18
1104-1 B15
1104-2 B20
1104-3 C14
1105 F5
1106-1 J5
1106-2 K5
1106-3 J5
1106-4 I5
1106-5 H5
1106-6 I5
1108 L6
1111 G11
1113 I11
1114 I10
1119 M18
1125 B15
1126 C15
1127 C16
1128 E16
1129 B20
1130 C20
1131 C20
1132 E20
1134 B4
1135 B4
1136 C5
1137 B5
1138 B5
1139 B9
1140 B9
1141 C8
1142 D8
1143 D9
1144 D9
1145 C9
1146 B9
1147 B9
1148 G5
1149 G5
1150 H5
1151 I6
1152 I5
1153 I6
1154 I5
1155 J4
1156 K4
1157 K4
1158 F4
1171 C4
1172 C4
1173 D4
1174 E4
1175 E9
1176 E9
1180 H6
1181 M6
1182 L5
1183 M5
2110 B14
2111 C14
2112 C17
2113 B18
2114 C18
2115 C21
2116 B3
2117 B3
2118 B6
2119 B6
2120 C8
2121 B7
2122 B7
2123 B10
2124 C10
2125 C10
2126 G4
2127 G4
2128 H4
2129 I4
2130 I4
2131 H3
2132 I3
2133 J3
2134 K3
2135 K3
2136 F3
2138 G17
2139 K14
2141 G19
2142 I19
2143 I20
2144 I17
2145 H19
2146 K21
2147 M16
21A4 L14
21C0 F3
21C1 G3
21C2 H3
21C5 L3
21C6 L4
21C7 M4
21C8 M3
21C9 E8
21H3 L16
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3135 B14
3136 C14
3137 C14
3138 C16
3139 C16
3140 E16
3141 E17
3142 B18
3143 B19
3144 C18
3145 C19
3146 C21
3147 C21
3148 E20
3149 E21
3150 B3
3151 B3
3152 B3
3153 B3
3154 C3
3155 C3
3156 C3
3157 C4
3158 D3
3159 D4
3160 D3
3161 B5
3162 B5
3163 C5
3164 C6
3165 D6
3166 D5
3167 E5
3168 E6
3169 B7
3170 B8
3171 B7
3172 B8
3173 C7
3174 C8
3175 C7
3176 D7
3177 D8
3178 D8
3179 B10
3180 B10
3181 C10
3182 C10
3183 C10
3184 D10
3185 D10
3186 D10
3187 E10
3188 E10
3189 F3
3190 F4
3191 G3
3192 G4
3194 H3
3195 H4
3196 H3
3197 H4
3198 L16
3199 I3
31A0 I4
31A1 M16
31A2 F3
31A3 F3
31A4 F14
31A5 G14
31A6 H14
31A7 H14
31A8 I14
31A9 J14
31B0 J14
31B1 L14
31B2 B6
31B4 K21
31B5 K21
31B7 H17
31B9 L15
31C0 I19
31C1 L20
31C2 L16
31C3 L16
31C4 B6
31C6 B11
31C7 I17
31C8 I19
31C9 I19
31D0 K20
31D3 I19
31K2 B10
31K3 B10
31N5 B6
31N6 B6
31P8 L3
31P9 M3
31S0 L4
31S1 M4
31S2 B11
31S3 B13
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31S5 B18
31S6 C18
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31S9 H19
31T0 G3
31T1 G3
31T2 H3
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31T4 I3
31T5 L3
31T6 M3
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6114 C16
6115 E16
6116 B19
6117 C19
6118 C19
6119 C19
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6121 E21
6122 B4
6123 B4
6124 B4
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6126 C4
6127 C4
6128 D4
6129 E4
6130 B5
6131 B5
6132 B5
6133 C5
6134 C6
6135 D5
6136 E5
6137 B8
6138 B8
6139 B8
6140 B8
6141 C8
6142 C8
6143 E8
6144 D8
6145 B10
6146 B10
6147 B10
6148 C10
6149 C11
6150 D10
6151 D10
6152 E10
6153 F4
6154 G5
6155 G4
6156 H5
6157 H4
6158 H5
6159 I4
6160 I5
6161 I4
6162 J5
6163 J4
6164 J4
6165 J4
6166 K4
6167 K4
6168 K4
6169 F4
6170 F4
6173 K17
6174 K17
6175 J18
6176 J20
6177 J20
6178 J18
6179 J18
61A0 C5
61A1 M5
61A2 M5
61A3 L4
61A4 M4
61A5 J21
61A6 K21
61A7 K15
61A8 K21
7101-A F13
7101-B G13
7102-A H13
7102-B H13
7103-A I13
7103-B J13
7104-A J13
7105 L13
7107 K20
7108-A I18
7108-B H18
7109 K21
7144-A L15
7144-B L15
9105 H18
9106 I18
9107 K3
9108 K10
9109 J10
9110 K10
9111 J10
9112 L10
9113 J21
9114 K13
9115 K15
9116 K19
9117 D2
9192 J12
9193 J10
9194 I12
9197 K10
9198 L3
91B1 J8
91B2 J8
91B3 I3
91B4 M3
F110 L11
F111 L11
F112 K10
F113 K10
F114 K10
F115 I10
F116 I10
F117 I10
F118 I10
F119 J10
F120 B14
F121 C14
F122 B15
F123 D15
F124 C16
F125 E16
F126 B19
F127 C19
F128 B20
F129 D20
F130 C20
F131 E21
F132 B4
F133 B4
F134 B4
F135 C4
F136 C4
F137 D4
F138 D4
F139 D4
F140 E4
F141 B5
F142 B5
F143 C5
F144 D5
F145 E5
F146 B8
F147 B8
F148 B9
F149 C8
F150 H11
F151 D9
F152 D8
F153 D8
F154 E9
F155 C9
F156 D10
F157 C9
F158 B10
F159 B10
F160 F5
F161 G5
F162 H5
F163 I5
F164 I5
F165 J4
F166 J4
F167 M5
F168 F4
F169 H11
F191 H2
F192 H2
F193 I2
F194 K11
F196 H11
F197 L18
F198 L18
F199 L19
F1A0 L19
F1A1 L19
F1A2 L19
F1A3 L19
F1A4 L19
F1A6 L5
F1A8 K4
F1A9 H11
F1C1 J10
I120 B14
I121 C14
I122 C17
I123 B18
I124 C18
I125 A3
I126 B3
I127 C3
I128 K19
I129 C6
I130 L4
I131 M4
I132 A8
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I139 J12
I140 H19
I141 H4
I142 I4
I143 F3
I144 L13
I145 L15
I146 K21
I147 K20
I148 K20
I149 J21
I1A0 D3
I1A1 B6
I1A2 B6
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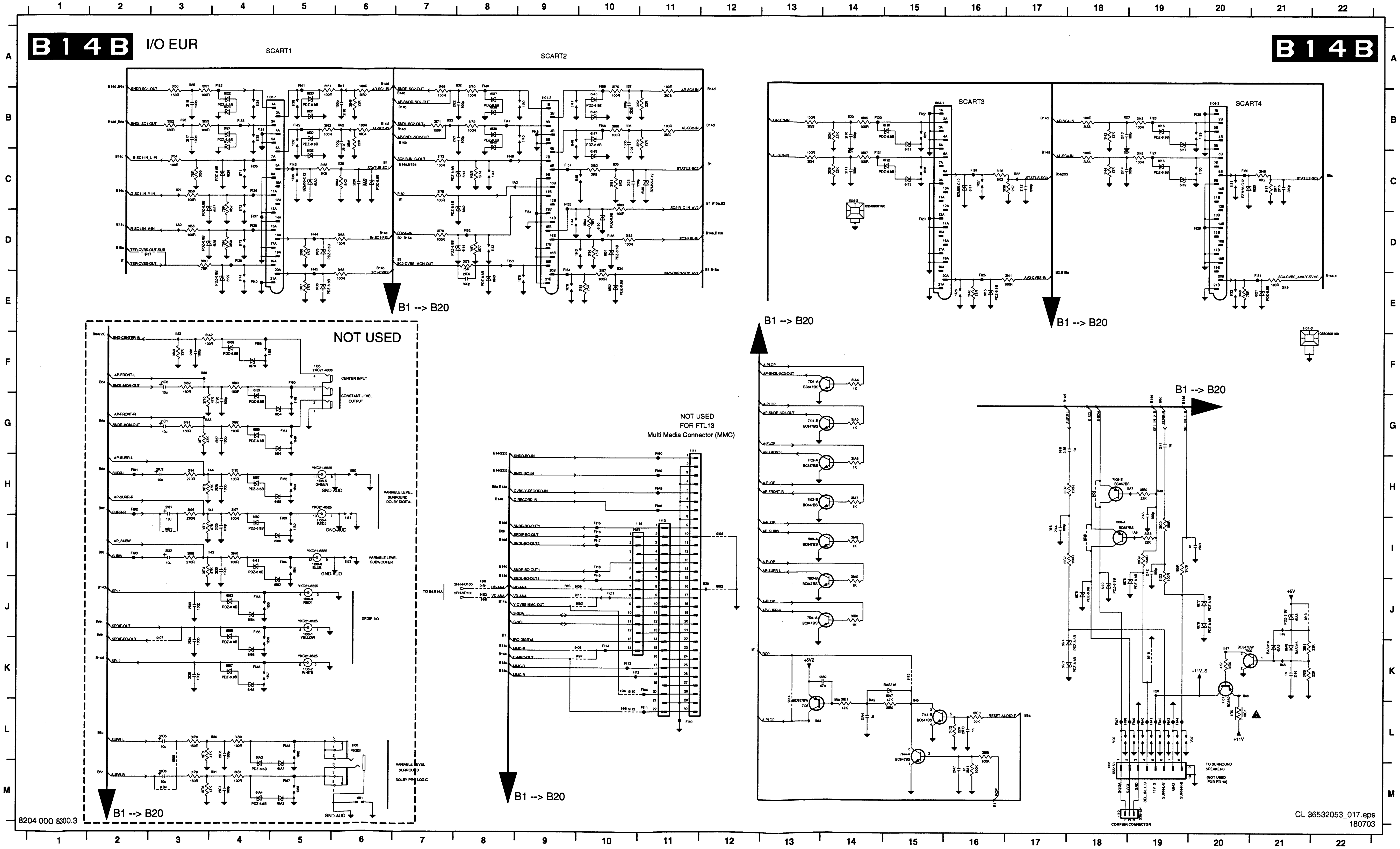
I1A8 I19
I1A9 L14
I1B0 L14



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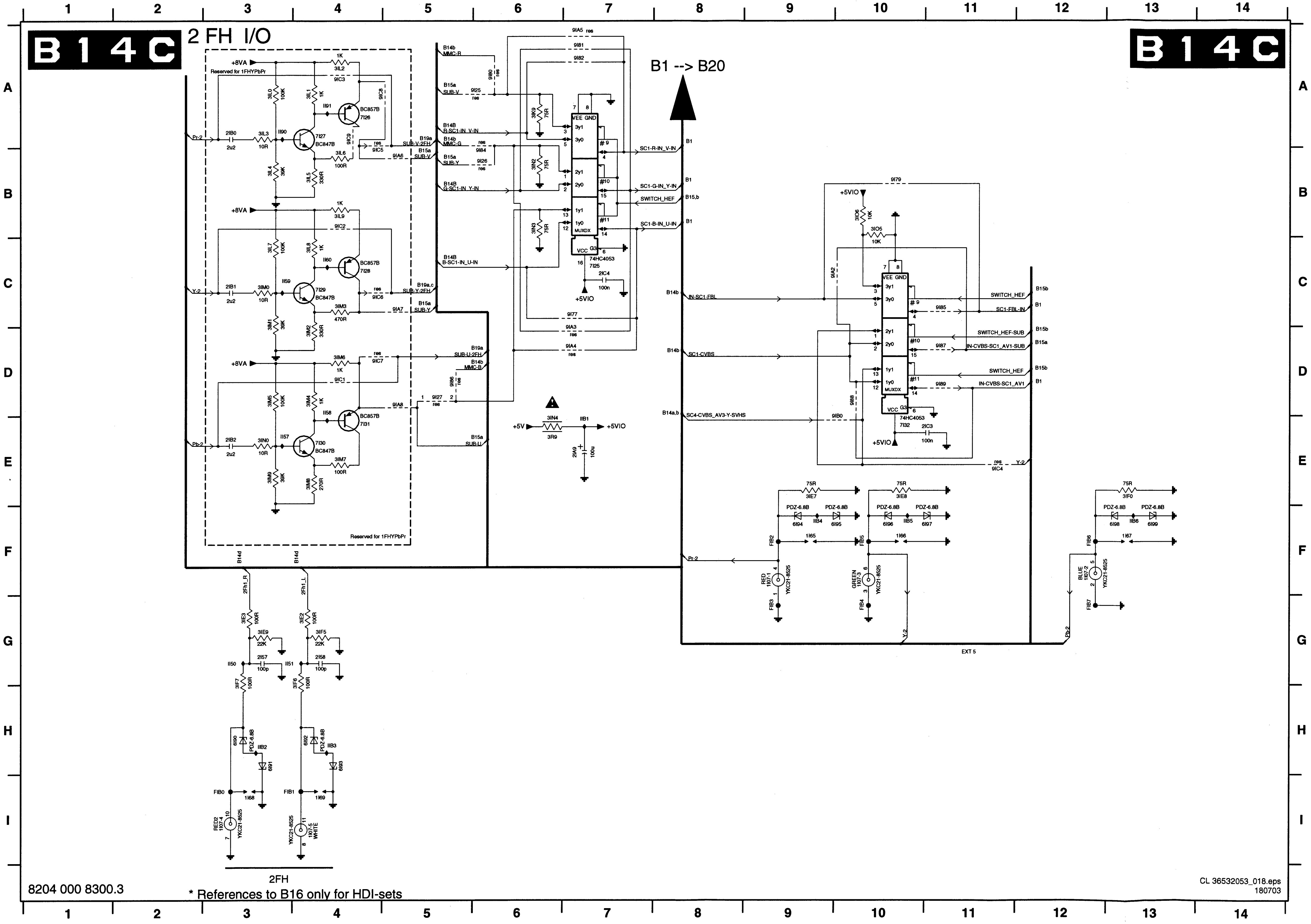
B14C
2 FH I/O
B14C
B1 --> B20
Reserved for 1FHYPbPr
+8VA
Pr-2
Y-2
Pb-2
BC857B
BC847B
7126
7127
7128
7129
7130
7131
74HC4053
7125
7132
MUXDX
VEE GND
VCC
SUB-V
SUB-Y
SUB-U
MMC-R
MMC-G
MMC-B
B-SC1-IN_V-IN
G-SC1-IN_Y-IN
B-SC1-IN_U-IN
SUB-V-2FH
SUB-Y-2FH
SUB-U-2FH
SC1-R-IN_V-IN
SC1-G-IN_Y-IN
SWITCH_HEF
SC1-B-IN_U-IN
IN-SC1-FBL
SC1-CVBS
SC4-CVBS_AV3-Y-SVHS
SC1-FBL-IN
SWITCH_HEF-SUB
IN-CVBS-SC1_AV1-SUB
IN-CVBS-SC1_AV1
+5VIO
+5V
3IN4
3R9
IIB1
2IA9
100u
PDZ-6.8B
75R
RED
GREEN
BLUE
YKC21-8525
EXT 5
2FH_R
2FH_L
RED2
WHITE
2FH
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

8204 000 8300.3

* References to B16 only for HDI-sets

CL 36532053_018.eps
180703

1I07-1	F9
1I07-2	F12
1I07-3	F10
1I07-4	I3
1I07-5	I4
1I65	F9
1I66	F10
1I67	F13
1I68	I3
1I69	I4
2I57	G3
2I58	G4
2IA9	E7
2IB0	A3
2IB1	C3
2IB2	E3
2IC3	E11
2IC4	C7
3IE2	G4
3IE3	G3
3IE7	E9
3IE8	E10
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3IF5	G4
3IF6	G4
3IF7	G3
3IK9	A6
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3IL1	A4
3IL2	A4
3IL3	A3
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3IL5	B4
3IL6	B4
3IL7	C3
3IL8	C4
3IL9	B4
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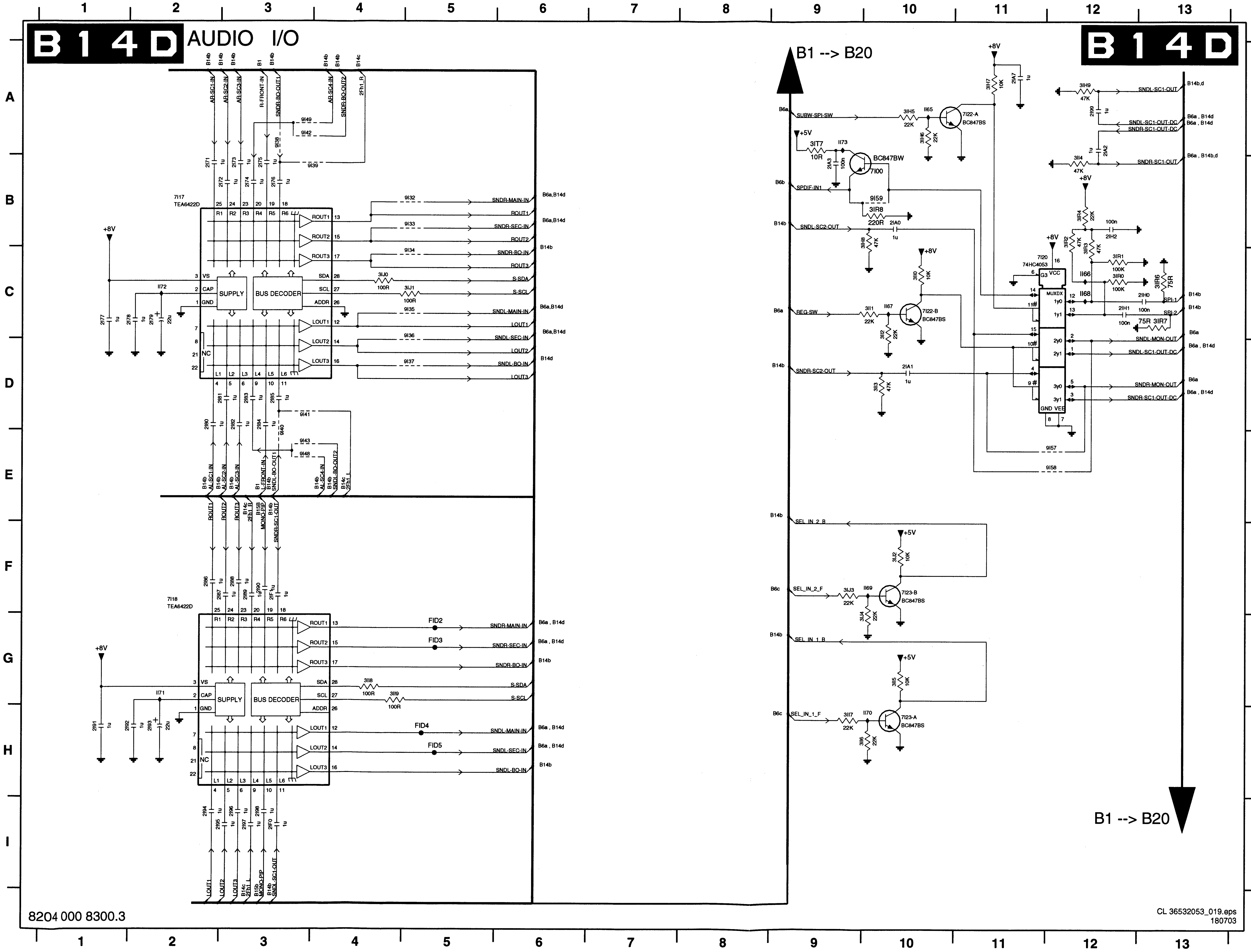
3IM1	C3
3IM2	D4
3IM3	C4
3IM4	D4
3IM5	D3
3IM6	D4
3IM7	E4
3IM8	E4
3IM9	E3
3IN0	E3
3IN2	B6
3IN3	B6
3IN4	E6
3IO5	B10
3IO6	B10
6I90	H3
6I91	H3
6I92	H4
6I93	H4
6I94	F9
6I95	F10
6I96	F10
6I97	F11
6I98	F13
6I99	F13
7I25	C7
7I26	A4
7I27	A4
7I28	C4
7I29	C4
7I30	E4
7I31	E4
7I32	E10
9I25	A6
9I26	B6
9I27	D5
9I77	C7
9I79	B10
9I80	A6
9I81	A7
9I82	A7
9I84	B6
9I85	C11
9I86	D5
9I87	D11
9I88	D10
9I89	D11
9IA2	C9
9IA3	D7
9IA4	D7
9IA5	A7
9IA6	B5
9IA7	C5
9IA8	D5
9IB0	E10
9IC1	D4
9IC2	B4
9IC3	A4
9IC4	E11
9IC5	B4
9IC6	C4
9IC7	D4
9IC8	A4
9IC9	A4
FIB0	I3
FIB1	I3
FIB2	F9
FIB3	G9
FIB4	G10
FIB5	F10
FIB6	F12
FIB7	G12
II50	G3
II51	G3
II57	E3
II58	D4
II59	C3
II60	C4
II90	A3
II91	A4
IIB1	E7
IIB2	H3
IIB3	H4
IIB4	F9
IIB5	F10
IIB6	F13

SSB (AA): Audio I/O


B14D
AUDIO I/O
B1 --> B20
7117
TEA6422D
7118
TEA6422D
SUPPLY
BUS DECODER
ROUT1
ROUT2
ROUT3
LOUT1
LOUT2
LOUT3
SDA
SCL
ADDR
VS
CAP
GND
NC
+8V
+5V
SNDR-MAIN-IN
SNDR-SEC-IN
SNDR-BO-IN
SNDL-MAIN-IN
SNDL-SEC-IN
SNDL-BO-IN
S-SDA
S-SCL
FID2
FID3
FID4
FID5
SUBW-SPI-SW
SPDIF-IN1
SNDL-SC2-OUT
REG-SW
SNDR-SC2-OUT
SEL_IN_2_B
SEL_IN_2_F
SEL_IN_1_B
SEL_IN_1_F
SNDL-SC1-OUT
SNDL-SC1-OUT-DC
SNDR-SC1-OUT-DC
SNDR-SC1-OUT
SNDL-MON-OUT
SNDR-MON-OUT
SPI-1
SPI-2
7120
74HC4053
MUXDX
VCC
GND VEE
7100
BC847BW
7122-A
BC847BS
7122-B
BC847BS
7123-A
BC847BS
7123-B
BC847BS

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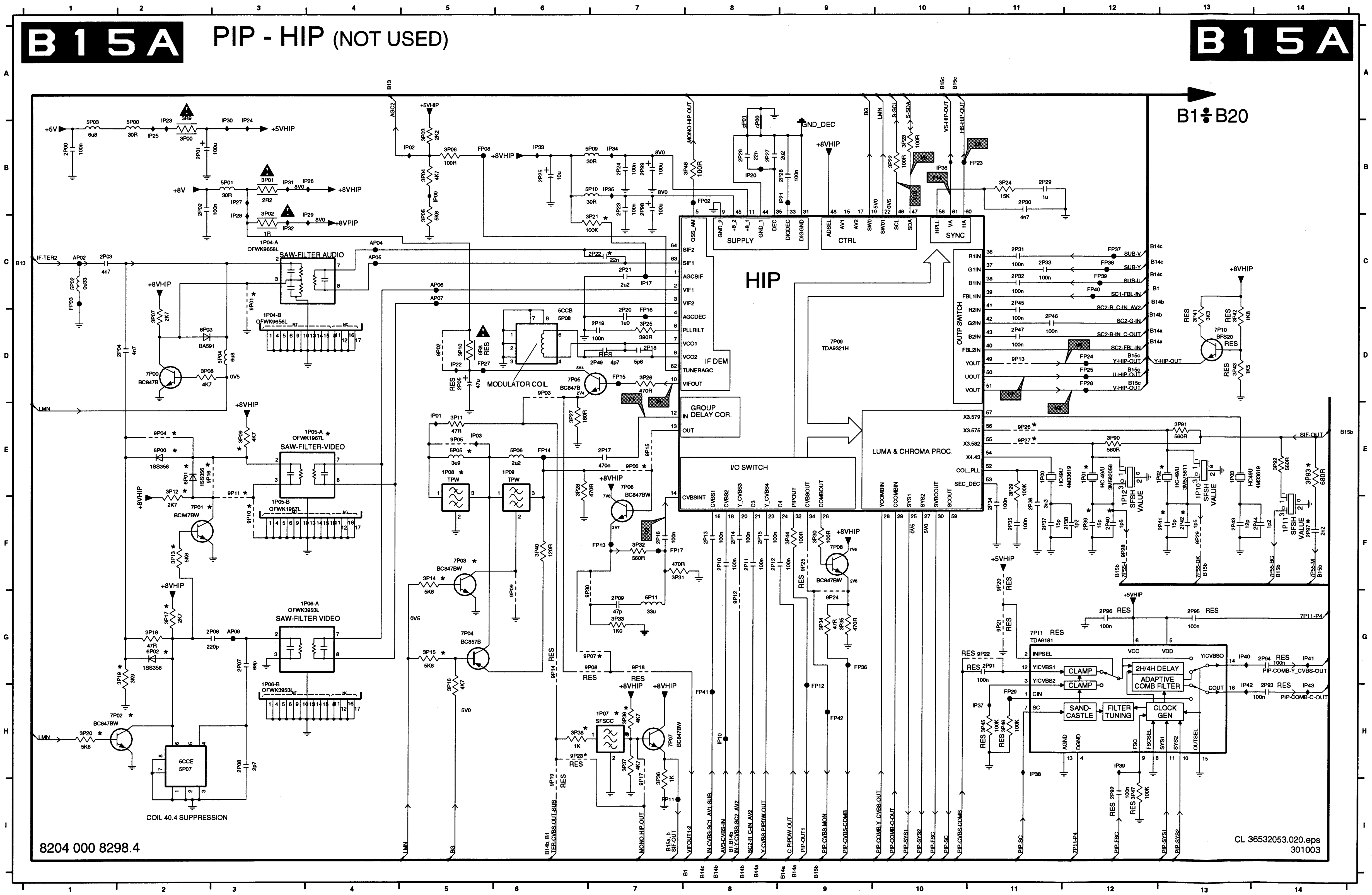
2I71	B2
2I72	B3
2I73	B3
2I74	B3
2I75	B3
2I76	B3
2I77	C1
2I78	C2
2I79	C2
2I80	D2
2I81	D3
2I82	D3
2I83	D3
2I84	D3
2I85	D3
2I86	F2
2I87	F3
2I88	F3
2I89	F3
2I90	F3
2I91	H1
2I92	H2
2I93	H2
2I94	I2
2I95	I3
2I96	I3
2I97	I3
2I98	I3
2I99	A12
2IA0	B10
2IA1	D10
2IA2	A12
2IA3	B9
2IA7	A11
2IF0	I3
2IF1	F3
2IH0	C13
2IH1	C12
2IH2	B12
3IH5	A10
3IH6	A10
3IH7	A11
3IH8	B10
3IH9	A12
3II0	C10
3II1	C10
3II2	C10
3II3	D10
3II4	A12
3II5	G10
3II6	H10
3II7	H9
3II8	G4
3II9	G4
3IJ0	C4
3IJ1	C5
3IJ2	F10
3IJ3	F9
3IJ4	F10
3IR0	C12
3IR1	B12
3IR2	B12
3IR3	B12
3IR4	B12
3IR6	C13
3IR7	C13
3IR8	B10
3IT7	A9
7I00	B10
7I17	B2
7I18	F2
7I20	B12
7I22-A	A11
7I22-B	C10
7I23-A	H10
7I23-B	F10
9I32	B5
9I33	B5
9I34	C5
9I35	C5
9I36	C5
9I37	D5
9I42	B3
9I43	E3
9I48	E3
9I49	A3
9I57	D12
9I58	E12
9I59	B10
FID2	G5
FID3	G5
FID4	H5
FID5	H5
II65	A10
II66	C12
II67	C10
II68	C12
II69	F10
II70	H10
II71	G2
II72	C2
II73	A9

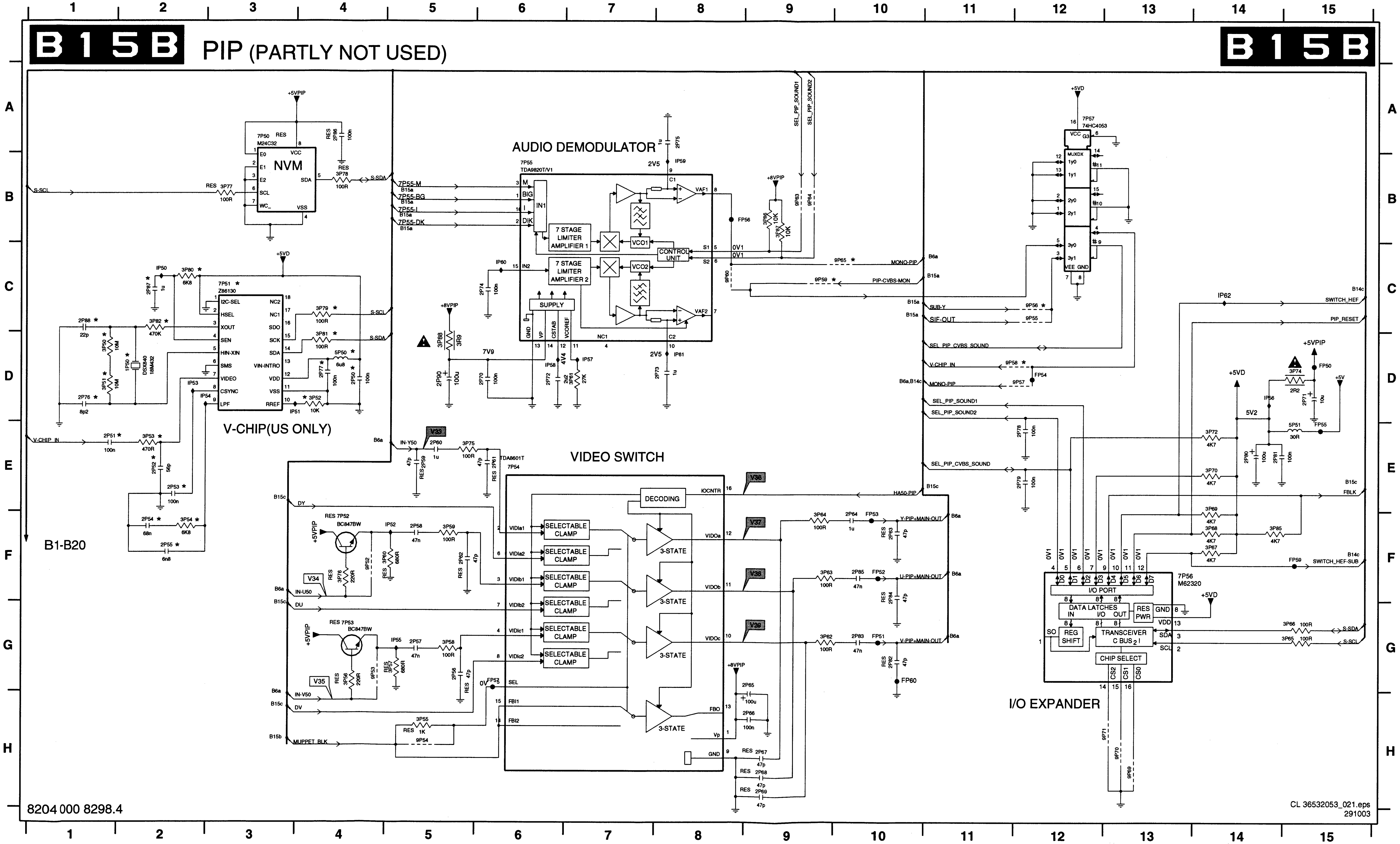
SSB (AA): PIP-HIP


B15A
PIP - HIP (NOT USED)
B15A
B1 ÷ B20
HIP
7P09
TDA9321H
SUPPLY
CTRL
SYNC
IF DEM
GROUP DELAY COR.
I/O SWITCH
LUMA & CHROMA PROC.
OUTP SWITCH
SAW-FILTER AUDIO
1P04-A
OFWK9656L
1P04-B
OFWK9656L
SAW-FILTER-VIDEO
1P05-A
OFWK1967L
1P05-B
OFWK1967L
SAW-FILTER VIDEO
1P06-A
OFWK3953L
1P06-B
OFWK3953L
MODULATOR COIL
5CCB
5P08
1P08
TPW
1P09
TPW
1P07
SFSCC
5CCE
5P07
COIL 40.4 SUPPRESSION
7P11
TDA9181
CLAMP
CLAMP
2H/4H DELAY
ADAPTIVE COMB FILTER
SAND-CASTLE
FILTER TUNING
CLOCK GEN
INPSEL
YICVBS1
YICVBS2
CIN
SC
VCC
VDD
YICVBSO
COUT
AGND
DGND
FSC
FSCSEL
SYS1
SYS2
OUTSEL
7P00
BC847B
7P01
BC847BW
7P02
BC847BW
7P03
BC847BW
7P04
BC857B
7P05
BC847B
7P06
BC847BW
7P07
BC847BW
7P08
BC847BW
7P10
BFS20
+5V
+5VHIP
+8V
+8VHIP
+8VPIP
IF-TER2
LMN
GND_DEC
SIF-OUT
Y-HIP-OUT
U-HIP-OUT
V-HIP-OUT
SUB-Y
SUB-U
SUB-V
SC1-FBL-IN
SC2-R_C-IN_AV2
SC2-G-IN
SC2-B-IN_C-OUT
SC2-FBL-IN
MONO-HIP-OUT
VS-HIP-OUT
HS-HIP-OUT
PIP-COMB-Y_CVBS-OUT
PIP-COMB-C-OUT
7P11-P4
SFSH VALUE
1000-A
1P00
1P01
1P02
HC-49U
4M33619
3M582056
3M575611
RES
8204 000 8298.4
CL 36532053.020.eps
301003

1000-A E1
1P00 E11
1P01 E12
1P02 E13
1P03 E13
1P04-A C3
1P04-B D3
1P05-A E4
1P05-B F3
1P06-A G4
1P06-B H3
1P07 G7
1P08 E5
1P09 E6
1P10 E13
1P11 F14
1P12 E12
2P00 B1
2P01 B2
2P02 B2
2P03 C1
2P04 D2
2P05 D5
2P06 G3
2P07 G3
2P08 H3
2P10 F8
2P11 F8
2P12 F8
2P13 F8
2P14 F8
2P15 F8
2P16 F7
2P17 E7
2P18 D7
2P19 D7
2P20 D7
2P21 C7
2P22 C7
2P23 B7
2P24 B7
2P25 B6
2P26 B8
2P27 B8
2P28 B9
2P29 B11
2P30 B11
2P31 C11
2P32 C11
2P33 C11
2P34 F11
2P35 F11
2P36 F11
2P37 F11
2P38 F12
2P39 F12
2P40 F12
2P41 F13
2P42 F13
2P43 F13
2P44 F14
2P45 C11
2P46 D11
2P47 D11
2P48 F7
2P49 D7
2P91 G11
2P92 I12
2P93 H14
2P94 G14
2P95 G13
2P96 G12
2P97 F14
2P98 B7
2P99 B7
3P00 B2
3P01 B3
3P02 C3
3P03 B5
3P04 B5
3P05 C5
3P06 B5
3P07 D2
3P08 D2
3P09 E3
3P10 D5
3P11 E5
3P12 E2
3P13 F2
3P14 F5
3P15 G5
3P16 H5
3P17 G2
3P18 G2
3P19 G2
3P20 H1
3P21 C7
3P22 B10
3P23 B10
3P24 B11
3P25 D7
3P26 D7
3P27 E6
3P28 E6
3P29 E11
3P30 F9
3P31 F7
3P32 F7
3P34 G9
3P35 G9
3P36 H7
3P37 H7
3P38 H6
3P39 G7
3P40 F6
3P41 D13
3P42 D13
3P43 D13
3P44 F9
3P45 H11
3P46 H11
3P47 I12
3P48 B7
3P90 E12
3P91 E13
3P92 E14
3P93 E14
5P00 B2
5P01 B3
5P02 C1
5P03 B1
5P04 D3
5P05 E5
5P06 E6
5P07 H2
5P08 D6
5P09 B7
5P10 B7
6P00 E2
6P01 E2
6P02 G2
6P03 D2
7P00 D2
7P01 F2
7P02 H1
7P03 F5
7P04 G5
7P05 D6
7P06 E7
7P07 H7
7P08 F9
7P09 D9
7P10 D13
7P11 G11
9P00 B4
9P01 C3
9P02 D5
9P03 D6
9P04 E2
9P05 E5
9P06 E7
9P07 G7
9P08 G7
9P09 G6
9P10 F3
9P11 E3
9P12 G8
9P13 D11
9P14 G6
9P15 E7
9P16 E2
9P17 H7
9P18 G7
9P19 I6
9P20 F11
9P21 G11
9P22 G11
9P23 I6
9P24 G9
9P25 F9
9P26 E11
9P27 E11
9P28 F12
9P29 F13
AP02 C1
AP04 C4
AP05 C4
AP06 C5
AP07 C5
AP09 G3
FP02 B8
FP03 C1
FP08 B5
FP11 I7
FP12 H9
FP13 F7
FP14 E6
FP15 D7
FP16 D7
FP17 F7
FP23 B11
FP24 D12
FP25 D12
FP26 D12
FP27 D5
FP29 H11
FP36 G9
FP37 C12
FP38 C12
FP39 C12
FP40 C12
FP41 H8
FP42 H9
IP00 B5
IP01 E5
IP02 B5
IP03 E5
IP10 H8
IP17 C7
IP20 B8
IP21 B9
IP22 D5
IP23 B2
IP24 B3
IP25 B2
IP26 B4
IP27 B3
IP28 C3
IP29 C4
IP30 B3
IP31 B3
IP32 C3
IP33 B6
IP34 B7
IP35 B7
IP36 B10
IP37 H11
IP38 H11
IP39 H12
IP40 G13
IP41 G14
IP42 H13
IP43 H14
cP00 B8

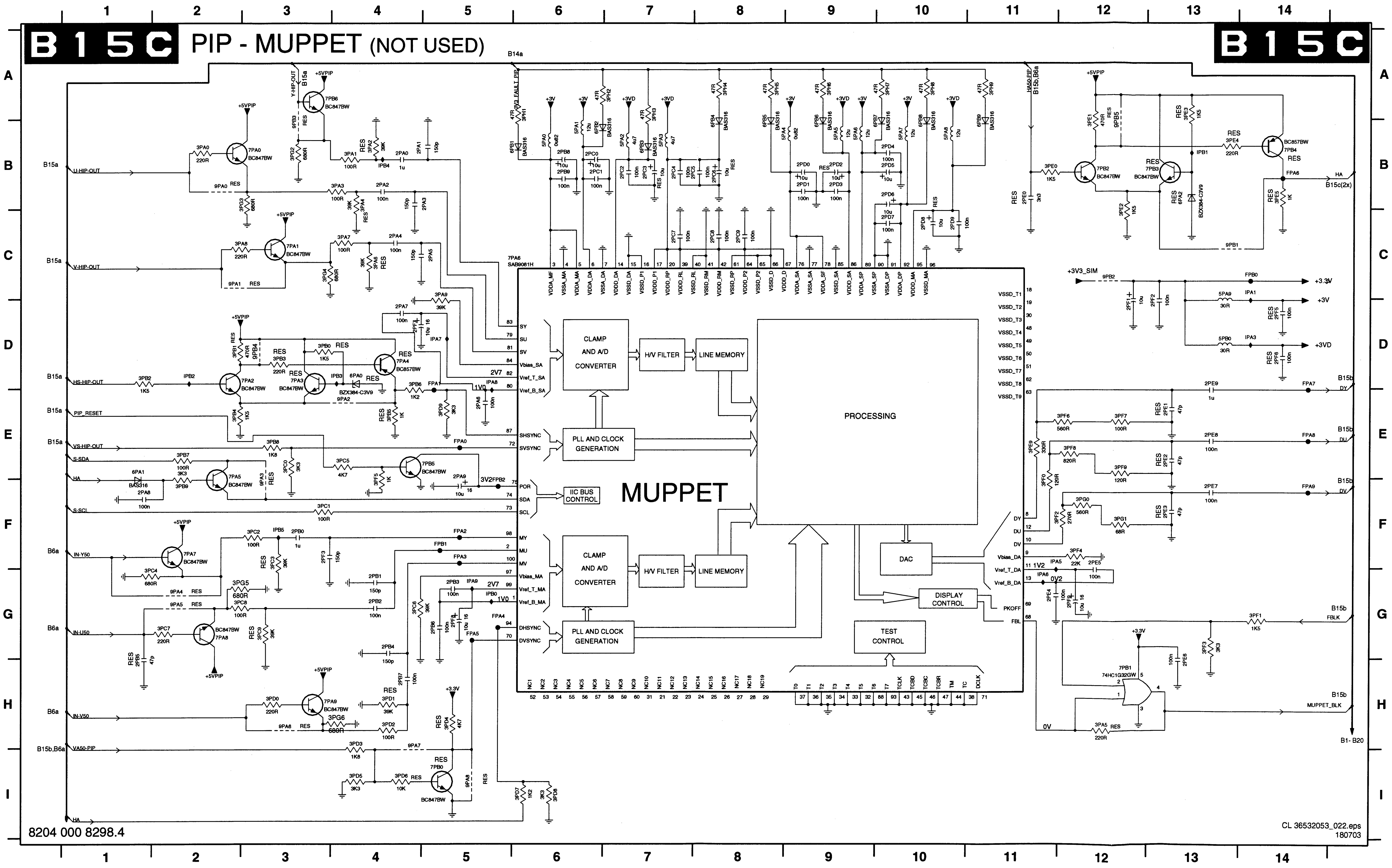
SSB (AA): PIP

1P50	D2
2P50	D4
2P51	E1
2P52	E2
2P53	E2
2P54	F2
2P55	F2
2P56	G5
2P57	G5
2P58	F5
2P59	E5
2P60	E5
2P61	E6
2P62	F5
2P63	F10
2P64	F10
2P65	G9
2P66	H9
2P67	H9
2P68	H9
2P69	H9
2P70	D6
2P71	D15
2P72	D6
2P73	D8
2P74	C6
2P75	A8
2P76	D1
2P77	D4
2P78	E12
2P79	E12
2P80	E14
2P81	E14
2P82	G10
2P83	G10
2P84	F10
2P85	F10
2P86	A4
2P87	C2
2P88	C1
2P90	D5
3P50	D1
3P51	D1
3P52	D4
3P53	E2
3P54	F2
3P55	H5
3P56	G4
3P57	G5
3P58	G5
3P59	F5
3P60	F5
3P61	D7
3P62	G9
3P63	F9
3P64	F9
3P65	G15
3P66	G15
3P67	F14
3P68	F14
3P69	E14
3P70	E14
3P72	E14
3P74	D15
3P75	E5
3P76	F4
3P77	B3
3P78	B4
3P79	C4
3P80	C2
3P81	D4
3P82	C2
3P85	F14
3P86	B9
3P87	B9
3P88	D5
5P50	D4
5P51	E15
7P50	A3
7P51	C3
7P52	F4
7P53	G4
7P54	E6
7P55	B6
7P56	F13
7P57	A12
9P52	F4
9P53	G4
9P54	H5
9P55	C12
9P56	C12
9P57	D12
9P58	D11
9P59	C9
9P60	C8
9P63	B9
9P64	B9
9P65	C10
9P69	H13
9P70	H13
9P71	H13
FP50	D15
FP51	G10
FP52	F10
FP53	F10
FP54	D12
FP55	E15
FP56	B8
FP57	G6
FP59	F15
FP60	G10
IP50	C2
IP51	D3
IP52	F5
IP53	D2
IP54	D2
IP55	G5
IP56	D14
IP57	D7
IP58	D6
IP59	B8
IP60	C6
IP61	D8
IP62	C14

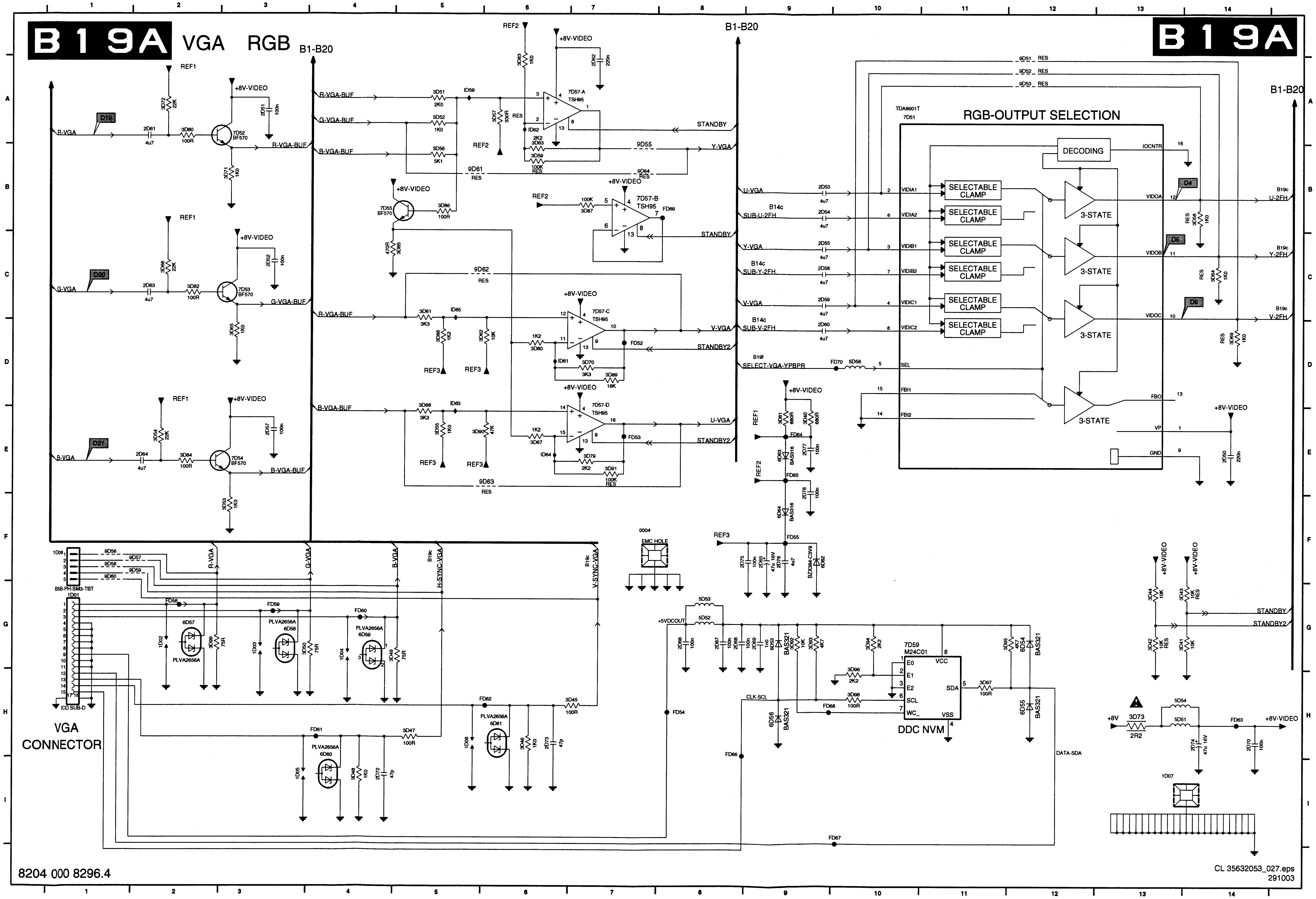

B15B
PIP (PARTLY NOT USED)
B15B
NVM
7P50 M24C32
AUDIO DEMODULATOR
7P55 TDA9820T/V1
7 STAGE LIMITER AMPLIFIER 1
7 STAGE LIMITER AMPLIFIER 2
CONTROL UNIT
VCO1
VCO2
SUPPLY
V-CHIP(US ONLY)
7P51 Z86130
VIDEO SWITCH
7P54 TDA8601T
SELECTABLE CLAMP
3-STATE
DECODING
7P52 BC847BW
7P53 BC847BW
7P57 74HC4053
I/O EXPANDER
7P56 M62320
I/O PORT
DATA LATCHES
TRANSCEIVER C BUS
REG SHIFT
CHIP SELECT
S-SCL
S-SDA
V-CHIP_IN
SEL_PIP_SOUND1
SEL_PIP_SOUND2
MONO-PIP
PIP-CVBS-MON
SUB-Y
SIF-OUT
SEL_PIP_CVBS_SOUND
SWITCH_HEF
PIP_RESET
FBLK
SWITCH_HEF-SUB
Y-PIP+MAIN-OUT
U-PIP+MAIN-OUT
V-PIP+MAIN-OUT
MUPPET_BLK
+5VPIP
+8VPIP
+5VD
+5V
V33
V34
V35
V36
V37
V38
V39
B1-B20
8204 000 8298.4
CL 36532053_021.eps
291003

SSB (AA): PIP-Muppet

2PA0 B4
2PA1 B4
2PA2 B4
2PA3 B5
2PA4 C4
2PA5 C5
2PA6 E5
2PA7 D4
2PA8 F1
2PA9 E5
2PB0 F3
2PB1 G4
2PB2 G4
2PB3 G5
2PB4 G4
2PB5 H1
2PB6 G5
2PB7 H4
2PB8 B6
2PB9 B6
2PC0 B6
2PC1 B6
2PC2 B7
2PC3 B7
2PC4 B7
2PC5 B8
2PC6 B8
2PC7 C7
2PC8 C8
2PC9 C8
2PD0 B9
2PD1 B9
2PD2 B9
2PD3 B9
2PD4 B10
2PD5 B10
2PD6 B10
2PD7 C10
2PD8 C10
2PD9 C10
2PE0 B11
2PE1 E13
2PE2 E13
2PE3 F13
2PE4 G11
2PE5 F12
2PE6 H13
2PE7 F13
2PE8 E13
2PE9 D13
2PF1 D12
2PF2 D13
2PF3 F3
2PF5 D14
2PF6 D14
2PF7 D4
2PF8 G5
2PF9 G12
3PA0 B2
3PA1 B4
3PA2 B4
3PA3 B4
3PA4 B4
3PA5 H12
3PA6 C4
3PA7 C4
3PA8 C2
3PA9 C5
3PB0 D3
3PB1 D2
3PB2 D1
3PB3 D3
3PB4 E2
3PB5 E4
3PB6 D4
3PB7 E2
3PB8 E3
3PB9 F2
3PC0 E3
3PC1 F3
3PC2 F3
3PC3 F3
3PC4 G1
3PC5 E4
3PC6 G4
3PC7 G2
3PC8 G2
3PC9 G3
3PD0 H3
3PD1 H4
3PD2 H4
3PD3 H4
3PD4 H5
3PD5 I4
3PD6 I4
3PD7 I6
3PD8 I6
3PD9 E5
3PE0 B11
3PE1 B12
3PE2 C12
3PE3 A13
3PE4 B13
3PE5 B14
3PE9 E11
3PF0 F11
3PF1 G14
3PF2 F12
3PF3 G13
3PF4 F12
3PF5 F4
3PF6 E12
3PF7 E12
3PF8 E12
3PF9 E12
3PG0 F12
3PG1 F12
3PG2 B3
3PG3 B3
3PG4 C3
3PG5 G2
3PG6 H4
3PH1 A6
3PH2 A7
3PH3 A7
3PH4 A8
3PH5 A8
3PH6 A9
3PH7 A10
3PH8 A10
3PH9 A11
5PA0 B6
5PA1 B6
5PA2 B7
5PA3 B7
5PA4 B9
5PA5 B9
5PA6 B9
5PA7 B10
5PA8 B10
5PA9 C13
5PB0 D13
6PA0 D4
6PA1 E1
6PA2 B13
6PB1 B6
6PB2 B6
6PB3 B7
6PB4 B8
6PB5 B8
6PB6 B9
6PB7 B10
6PB8 B10
6PB9 B11
7PA0 B3
7PA1 C3
7PA2 D2
7PA3 D3
7PA4 D4
7PA5 E2
7PA6 C5
7PA7 F2
7PA8 G2
7PA9 H3
7PB0 I5
7PB1 H12
7PB2 B12
7PB3 B13
7PB4 B14
7PB5 E4
7PB6 A3
9PA0 B2
9PA1 C2
9PA2 E4
9PA3 F3
9PA4 G2
9PA5 G2
9PA6 H3
9PA7 H4
9PA8 I5
9PB1 C13
9PB2 C12
9PB3 B3
9PB4 D3
9PB5 B12
FPA0 E5
FPA1 D5
FPA2 F5
FPA3 F5
FPA4 G5
FPA5 G5
FPA6 B14
FPA7 D14
FPA8 E14
FPA9 F14
FPB0 C14
FPB1 F5
FPB2 F5
IPA1 C14
IPA3 D14
IPA5 F11
IPA6 G11
IPA7 D5
IPA8 D5
IPA9 G5
IPB0 G5
IPB1 B13
IPB2 D2
IPB3 D4
IPB4 B4
IPB5 F3

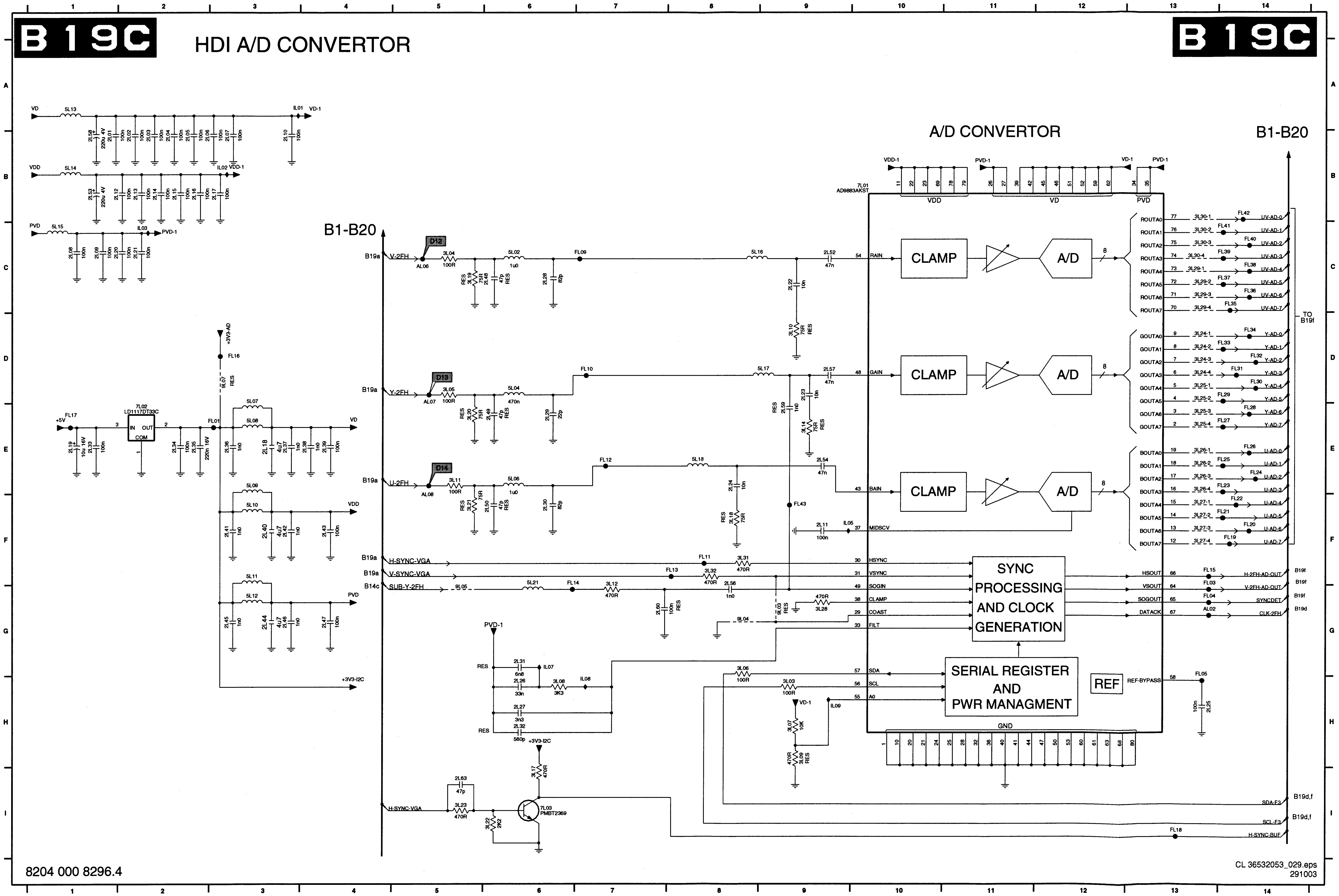

B15C
PIP - MUPPET (NOT USED)
B15C
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
B14a
B15a
U-HIP-OUT
V-HIP-OUT
HS-HIP-OUT
PIP_RESET
VS-HIP-OUT
S-SDA
HA
S-SCL
B6a
IN-Y50
IN-U50
IN-V50
B15b,B6a
VA50-PIP
+5VPIP
+3V
+3VD
+3.3V
+3V3_SIM
FAULT_PIP
HA50-PIP B15b,B6a
7PA6 SAB9081H
MUPPET
CLAMP AND A/D CONVERTER
H/V FILTER
LINE MEMORY
PROCESSING
PLL AND CLOCK GENERATION
IIC BUS CONTROL
DAC
DISPLAY CONTROL
TEST CONTROL
SY
SU
SV
Vbias_SA
Vref_T_SA
Vref_B_SA
SHSYNC
SVSYNC
POR
SDA
SCL
MY
MU
MV
Vbias_MA
Vref_T_MA
Vref_B_MA
DHSYNC
DVSYNC
DY
DU
DV
Vbias_DA
Vref_T_DA
Vref_B_DA
PKOFF
FBL
VSSD_T1
VSSD_T2
VSSD_T3
VSSD_T4
VSSD_T5
VSSD_T6
VSSD_T7
VSSD_T8
VSSD_T9
2V7
1V0
3V2
1V2
0V2
0V
BC847BW
BC857BW
BZX384-C3V9
BAS316
74HC1G32GW
RES
B15b
DY
DU
DV
FBLK
MUPPET_BLK
HA
B15c(2x)
B1- B20
+3.3V
+3V
+3VD
8204 000 8298.4
CL 36532053_022.eps
180703

SSB (AA): VGA RGB


B19A VGA RGB
B1-B20
B19A
RGB-OUTPUT SELECTION
TDA8601T
7D51
DECODING
SELECTABLE CLAMP
3-STATE
DDC NVM
7D59
M24C01
VGA CONNECTOR
1D01
1D08
ICD SUB-D
B5B-PH-SM3-TBT
EMC HOLE
0004
1D07
R-VGA
G-VGA
B-VGA
R-VGA-BUF
G-VGA-BUF
B-VGA-BUF
H-SYNC-VGA
V-SYNC-VGA
Y-VGA
U-VGA
V-VGA
SUB-U-2FH
SUB-Y-2FH
SUB-V-2FH
U-2FH
Y-2FH
V-2FH
SELECT-VGA-YPBPR
STANDBY
STANDBY2
+8V-VIDEO
+5VDCOUT
+8V
REF1
REF2
REF3
CLK-SCL
DATA-SDA
7D52 BF570
7D53 BF570
7D54 BF570
7D55 BF570
7D57-A TSH95
7D57-B TSH95
7D57-C TSH95
7D57-D TSH95
PLVA2656A
BAS321
BAS316
BZX384-C3V9
D19
D20
D21
D4
D5
D6
8204 000 8296.4
CL 35632053_027.eps
291003

0004	F7
1D01	G1
1D02	G2
1D03	G3
1D04	G4
1D05	I3
1D06	H5
1D07	I13
1D08	F1
2D50	E14
2D51	A3
2D52	C3
2D53	B9
2D54	B9
2D55	C9
2D57	E3
2D58	C9
2D59	C9
2D60	D9
2D61	A2
2D62	A7
2D63	C2
2D64	E2
2D65	F9
2D66	G8
2D67	G8
2D68	G8
2D69	G9
2D70	H14
2D72	I4
2D73	H6
2D74	H14
2D75	F8
2D76	F9
2D77	E9
2D78	E9
3D40	E9
3D41	G14
3D42	G13
3D43	G14
3D44	G13
3D45	H7
3D46	H6
3D47	H5
3D48	I4
3D49	G4
3D50	G3
3D51	A5
3D52	A5
3D53	F3
3D54	E2
3D55	E5
3D56	B5
3D57	A6
3D58	B14
3D59	B6
3D60	D6
3D61	C5
3D62	D5
3D63	B6
3D64	C14
3D65	D3
3D66	C2
3D67	E6
3D68	E5
3D69	D14
3D70	D7
3D71	B3
3D72	A2
3D73	H13
3D79	E7
3D80	A2
3D81	E9
3D82	C2
3D83	A6
3D84	E2
3D85	C5
3D86	B5
3D87	B7
3D88	D5
3D89	D7
3D90	E5
3D91	E7
3D92	G9
3D93	G9
3D94	G10
3D95	G12
3D96	H10
3D97	H11
3D98	H10
3D99	G2
5D51	H13
5D52	G8
5D53	G8
5D54	H13
5D56	D10
6D53	G9
6D54	G12
6D55	H12
6D56	H9
6D57	G2
6D58	G3
6D59	G4
6D60	H4
6D61	H6
6D62	F9
6D63	E9
6D64	F9
7D51	A10
7D52	A3
7D53	C3
7D54	E3
7D55	B4
7D57-A	A6
7D57-B	B7
7D57-C	C7
7D57-D	E7
7D59	G10
9D51	A12
9D52	A12
9D53	A12
9D55	B7
9D56	F1
9D57	F2
9D58	F1
9D59	F2
9D60	F1
9D61	B5
9D62	C5
9D63	E6
9D64	B7
FD52	D7
FD53	E7
FD54	H8
FD55	F9
FD58	G2
FD59	G3
FD60	G4
FD61	H4
FD62	H6
FD63	H14
FD64	E9
FD65	E9
FD66	H8
FD67	I10
FD68	H9
FD69	B8
FD70	D10
ID59	A5
ID61	D6
ID62	A6
ID63	D5
ID64	E6
ID65	C5

SSB (AA): HDI A/D Convertor


B 19C
HDI A/D CONVERTOR
B 19C
A/D CONVERTOR
B1-B20
B1-B20
VD
VDD
PVD
VD-1
VDD-1
PVD-1
7L01
AD9883AKST
7L02
LD1117DT33C
7L03
PMBT2369
+5V
+3V3-AD
+3V3-I2C
B19a
B14c
V-2FH
Y-2FH
U-2FH
H-SYNC-VGA
V-SYNC-VGA
SUB-Y-2FH
D12
D13
D14
CLAMP
A/D
SYNC PROCESSING AND CLOCK GENERATION
SERIAL REGISTER AND PWR MANAGMENT
REF
GND
RAIN
GAIN
BAIN
MIDSCV
HSYNC
VSYNC
SOGIN
CLAMP
COAST
FILT
SDA
SCL
A0
REF-BYPASS
HSOUT
VSOUT
SOGOUT
DATACK
H-2FH-AD-OUT
V-2FH-AD-OUT
SYNCDFT
CLK-2FH
SDA-F3
SCL-F3
H-SYNC-BUF
B19f
B19d
B19d,f
TO B19f
UV-AD-0
Y-AD-0
U-AD-0

8204 000 8296.4

CL 36532053_029.eps
291003

2L01 B1
2L02 B2
2L03 B2
2L04 B2
2L05 B2
2L06 B2
2L07 B3
2L08 C1
2L09 C1
2L10 B3
2L11 F9
2L12 B1
2L13 B2
2L14 B2
2L15 B2
2L16 B2
2L17 B3
2L18 E3
2L19 E1
2L20 C1
2L21 C2
2L22 C9
2L23 D9
2L24 E8
2L25 H13
2L26 H6
2L27 H6
2L28 C6
2L29 E6
2L30 F6
2L31 G6
2L32 H6
2L33 E1
2L34 E2
2L35 E2
2L36 E3
2L37 E3
2L38 E4
2L39 E4
2L40 F3
2L41 F3
2L42 F3
2L43 F4
2L44 G3
2L45 G3
2L46 G3
2L47 G4
2L48 C5
2L49 E6
2L50 F6
2L52 C9
2L53 B1
2L54 E9
2L56 G8
2L57 D9
2L58 B1
2L59 E9
2L60 G7
2L63 I5
3L03 H9
3L04 C5
3L05 D5
3L06 G8
3L07 H9
3L08 H6
3L09 H9
3L10 D9
3L11 E5
3L12 G7
3L14 E9
3L17 I6
3L18 F8
3L19 C5
3L20 E5
3L21 F5
3L22 I6
3L23 I5
3L24-1 D13
3L24-2 D13
3L24-3 D13
3L24-4 D13
3L25-1 D13
3L25-2 D13
3L25-3 E13
3L25-4 E13
3L26-1 E13
3L26-2 E13
3L26-3 E13
3L26-4 E13
3L27-1 F13

3L27-2 F13
3L27-3 F13
3L27-4 F13
3L28 G9
3L29-1 C13
3L29-2 C13
3L29-3 C13
3L29-4 C13
3L30-1 B13
3L30-2 C13
3L30-3 C13
3L30-4 C13
3L31 F8
3L32 F8
5L02 C6
5L04 D6
5L06 E6
5L07 D3
5L08 E3
5L09 E3
5L10 F3
5L11 F3
5L12 G3
5L13 A1
5L14 B1
5L15 C1
5L16 C8
5L17 D9
5L18 E8
5L21 F6
7L01 B10
7L02 E2
7L03 I6
9L03 G9
9L04 G8
9L05 G5
9L07 D3
AL02 G13
AL06 C5
AL07 E5
AL08 F5
FL01 E3
FL03 F13
FL04 G13
FL05 G13
FL09 C7
FL10 D7
FL11 F8
FL12 E7
FL13 F8
FL14 F6
FL15 F13
FL16 D3
FL17 E1
FL18 I13
FL19 F14
FL20 F14
FL21 F14
FL22 F14
FL23 E14
FL24 E14
FL25 E14
FL26 E14
FL27 E14
FL28 E14
FL29 D14
FL30 D14
FL31 D14
FL32 D14
FL33 D14
FL34 D14
FL35 C14
FL36 C14
FL37 C14
FL38 C14
FL39 C14
FL40 C14
FL41 C14
FL42 B14
FL43 F9
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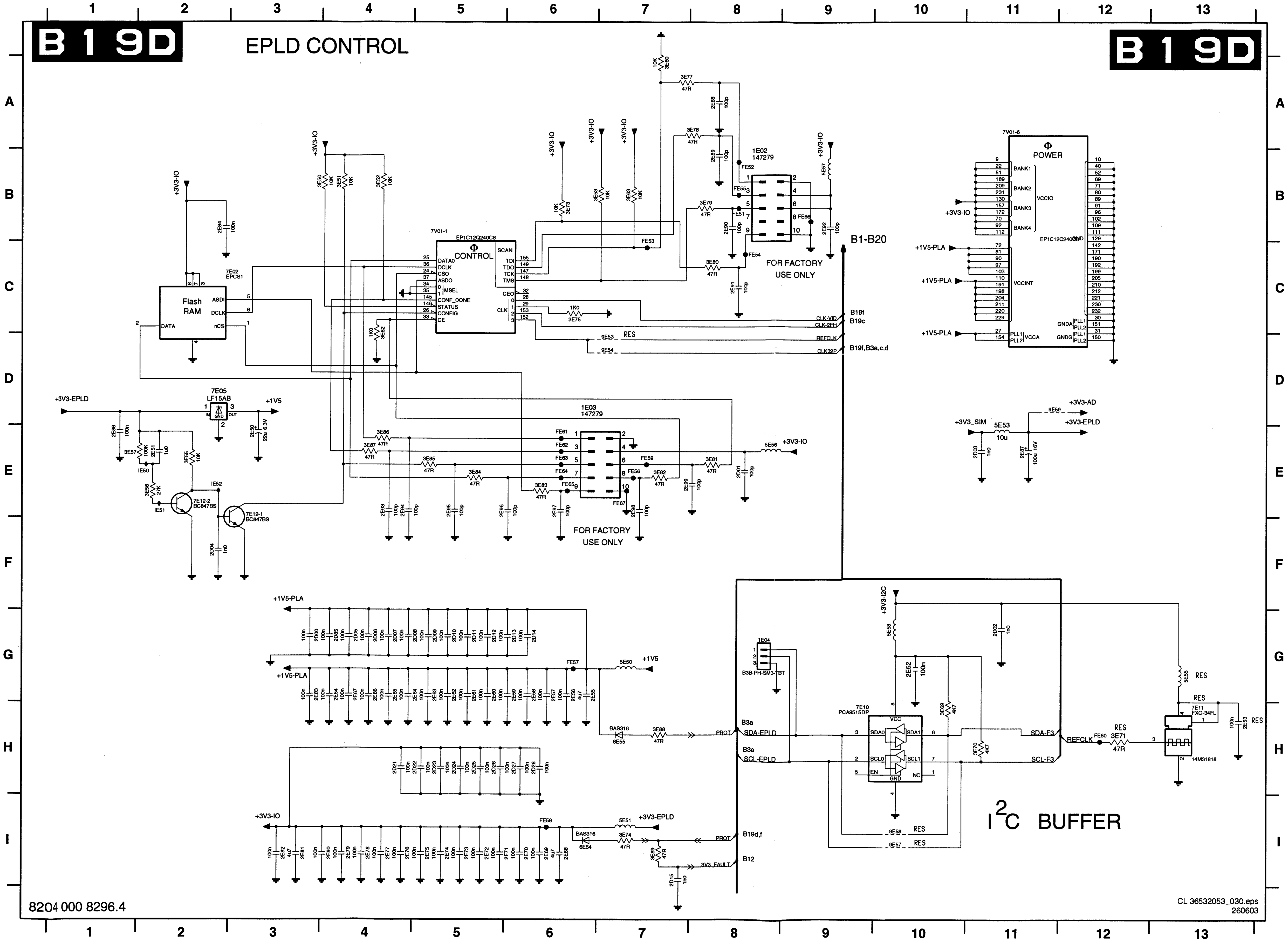
IL02 B3
IL03 C2
IL05 F9
IL07 G6
IL08 H7
IL09 H9

SSB (AA): EPLD Control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A B C D E F G H I
+3V3-IO
Flash RAM
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ASDI
DCLK
DATA
nCS
7V01-1
EP1C12Q240C8
CONTROL
DATA0
DCLK
CSO
ASDO
MSEL
CONF_DONE
STATUS
CONFIG
CE
SCAN
TDI
TDO
TCK
TMS
CEO
CLK
1E02 147279
FOR FACTORY USE ONLY
B1-B20
CLK-VID
CLK-2FH
REFCLK
CLK32P
B19f
B19c
B19f,B3a,c,d
7V01-6
POWER
BANK1
BANK2
BANK3
BANK4
VCCIO
VCCINT
VCCA
GNDA
GNDG
PLL1
PLL2
+3V3-IO
+1V5-PLA
+3V3-EPLD
7E05 LF15AB
+1V5
1E03 147279
+3V3-IO
7E12-2 BC847BS
7E12-1 BC847BS
FOR FACTORY USE ONLY
+3V3-AD
+3V3-EPLD
+3V3_SIM
5E53 10u
+1V5-PLA
+1V5
FE57
5E50
1E04
B3B-PH-SM3-TBT
+3V3-I2C
7E10 PCA9515DP
VCC
SDA0
SDA1
SCL0
SCL1
EN
GND
NC
SDA-EPLD
SCL-EPLD
SDA-F3
SCL-F3
B3a
PROT
BAS316
6E55
3E88 47R
REFCLK
FE60
3E71 47R
RES
7E11 FXO-34FL
14M31818
+3V3-IO
FE58
5E51
+3V3-EPLD
BAS316
6E54
3E74 47R
B19d,f
B12
3V3_FAULT
I²C BUFFER
8204 000 8296.4
CL 36532053_030.eps
260603

1E02 B8	
1E03 D6	
1E04 G8	
2D00 G3	
2D01 E8	
2D02 G11	
2D03 E11	
2D04 F2	
2D05 G4	
2D06 G4	
2D07 G4	
2D08 G5	
2D09 G5	
2D10 G5	
2D11 G5	
2D12 G5	
2D13 G6	
2D14 G6	
2D15 I7	
2D21 H4	
2D22 H5	
2D23 H5	
2D24 H5	
2D25 H5	
2D26 H5	
2D27 H6	
2D28 H6	
2D85 G4	
2E50 E3	
2E51 E2	
2E52 G10	
2E53 H13	
2E54 G4	
2E55 G6	
2E56 G6	
2E57 G6	
2E58 G6	
2E59 G6	
2E60 G5	
2E61 G5	
2E62 G5	
2E63 G5	
2E64 G5	
2E65 G4	
2E66 G4	
2E67 G4	
2E68 I6	
2E69 I6	
2E70 I6	
2E71 I6	
2E72 I5	
2E73 I5	
2E74 I5	
2E75 I5	
2E76 I4	
2E77 I4	
2E78 I4	
2E79 I4	
2E80 I4	
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2E82 I3	
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2E87 E11	
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2E91 C8	
2E92 B9	
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2E96 E5	
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2E99 E7	
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3E52 B4	
3E53 B6	
3E55 E2	
3E56 E2	
3E57 E1	
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3E63 B7	
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3E70 H11	
3E71 H12	
3E73 B6	
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3E78 A8	
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3E80 C8	
3E81 E8	
3E82 E7	
3E83 E6	
3E84 E5	
3E85 E5	
3E86 E4	
3E87 E4	
3E88 H7	
3E89 I7	
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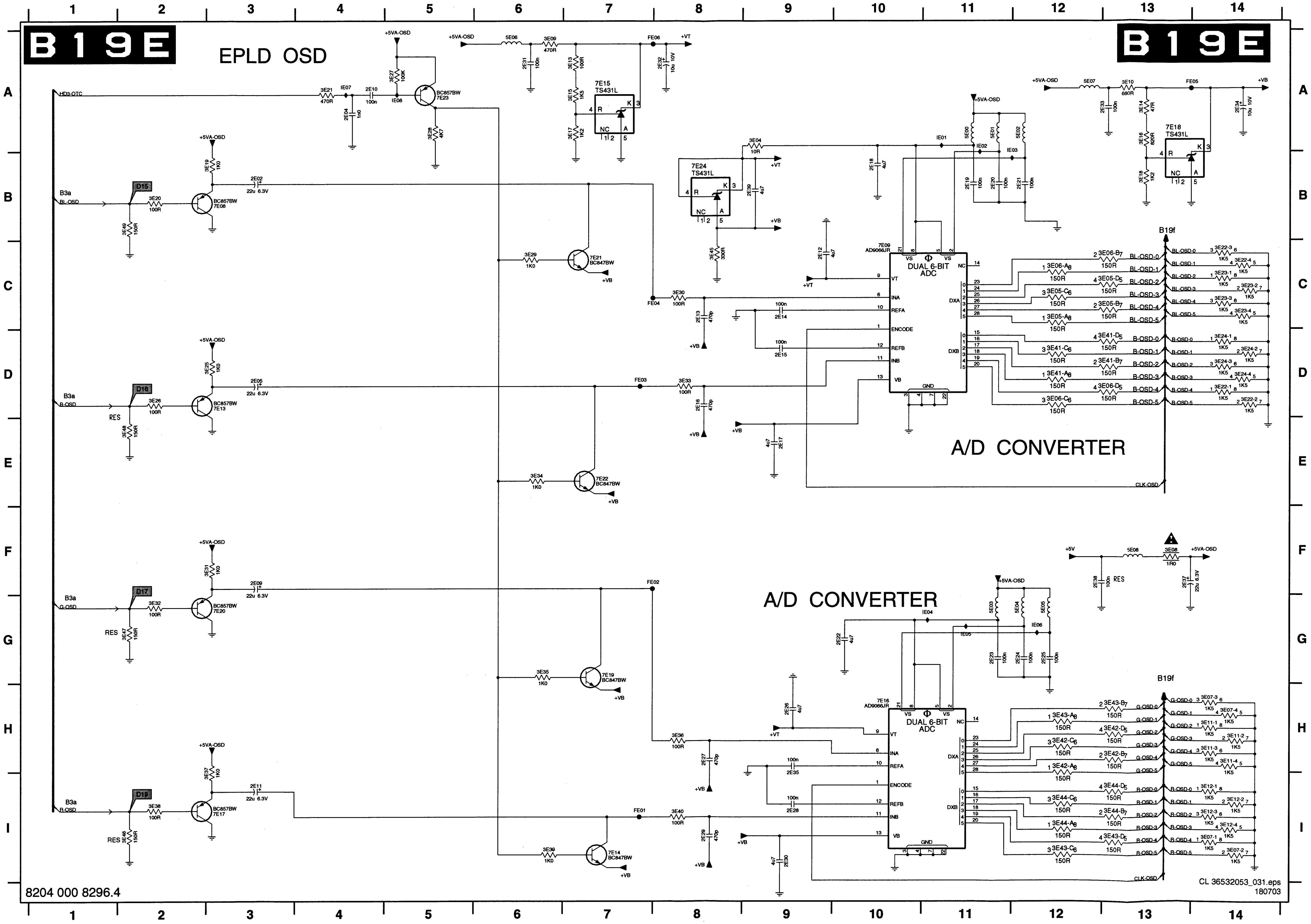
5E51 I7	
5E53 E11	
5E55 G13	
5E56 E8	
5E57 B9	
5E58 G10	
6E54 I6	
6E55 H7	
7E02 C2	
7E05 D2	
7E10 H9	
7E11 H13	
7E12-1 E3	
7E12-2 E2	
7V01-1 B5	
7V01-6 A11	
9E53 D7	
9E54 D7	
9E57 I10	
9E58 I10	
9E59 D11	
FE51 B8	
FE52 B8	
FE53 C7	
FE54 C8	
FE55 B8	
FE56 E7	
FE57 G6	
FE58 I6	
FE59 E7	
FE60 H12	
FE61 E6	
FE62 E6	
FE63 E6	
FE64 E6	
FE65 E6	
FE66 B9	
FE67 E7	
IE50 E2	
IE51 E2	
IE52 E2	

SSB (AA): EPLD OSD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EPLD OSD
A/D CONVERTER
A/D CONVERTER
HD3-OTC
B3a
BL-OSD
B-OSD
G-OSD
R-OSD
D15
D16
D17
D18
RES
+5VA-OSD
+VT
+VB
+5V
7E15 TS431L
7E24 TS431L
7E18 TS431L
7E23 BC857BW
7E08 BC857BW
7E13 BC857BW
7E20 BC857BW
7E17 BC857BW
7E21 BC847BW
7E22 BC847BW
7E19 BC847BW
7E14 BC847BW
7E09 AD9066JR
7E16 AD9066JR
DUAL 6-BIT ADC
VS
VT
INA
REFA
ENCODE
REFB
INB
VB
NC
DXA
DXB
GND
B19f
BL-OSD-0
BL-OSD-1
BL-OSD-2
BL-OSD-3
BL-OSD-4
BL-OSD-5
B-OSD-0
B-OSD-1
B-OSD-2
B-OSD-3
B-OSD-4
B-OSD-5
G-OSD-0
G-OSD-1
G-OSD-2
G-OSD-3
G-OSD-4
G-OSD-5
R-OSD-0
R-OSD-1
R-OSD-2
R-OSD-3
R-OSD-4
R-OSD-5
CLK-OSD
FE01
FE02
FE03
FE04
FE05
FE06
IE01
IE02
IE03
IE04
IE05
IE06
IE07
IE08
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I

8204 000 8296.4

CL 36532053_031.eps
180703

2E02	B3
2E04	A4
2E05	D3
2E09	F3
2E10	A4
2E11	I3
2E12	C9
2E13	C8
2E14	C9
2E15	D9
2E16	D8
2E17	E9
2E18	B10
2E19	B11
2E20	B11
2E21	B12
2E22	G10
2E23	G11
2E24	G12
2E25	G12
2E26	H9
2E27	H8
2E28	I9
2E29	I8
2E30	I9
2E31	A6
2E32	A8
2E33	A13
2E34	A14
2E35	H9
2E37	F13
2E38	F12
2E39	B9
3E04	A9
3E05-A	C12
3E05-B	C13
3E05-C	C12
3E05-D	C13
3E06-A	C12
3E06-B	C13
3E06-C	D12
3E06-D	D13
3E07-1	I14
3E07-2	I14
3E07-3	H14
3E07-4	H14
3E08	F13
3E09	A6
3E10	A13
3E11-1	H14
3E11-2	H14
3E11-3	H14
3E11-4	H14
3E12-1	I14
3E12-2	I14
3E12-3	I14
3E12-4	I14
3E13	A7
3E14	A13
3E15	A7
3E16	A13
3E17	A7
3E18	B13
3E19	B3
3E20	B2
3E21	A4
3E22-1	D14
3E22-2	D14
3E22-3	C14
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3E23-3	C14
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3E24-3	D14
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3E27	A5
3E28	A5
3E29	C6
3E30	C8
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3E32	G2
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3E34	E6
3E35	G6
3E36	H8
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3E38	I2
3E39	I6
3E40	I8
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3E41-B	D13
3E41-C	D12
3E41-D	D13
3E42-A	H12
3E42-B	H13
3E42-C	H12
3E42-D	H13
3E43-A	H12
3E43-B	H13
3E43-C	I12
3E43-D	I13
3E44-A	I12
3E44-B	I13
3E44-C	I12
3E44-D	I13
3E45	C8
3E46	I2
3E47	G2
3E48	E2
3E49	B2
5E00	A11
5E01	A11
5E02	A12
5E03	G11
5E04	G12
5E05	G12
5E06	A6
5E07	A12
5E08	F13
7E08	B3
7E09	C10
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7E15	A7
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7E18	A13
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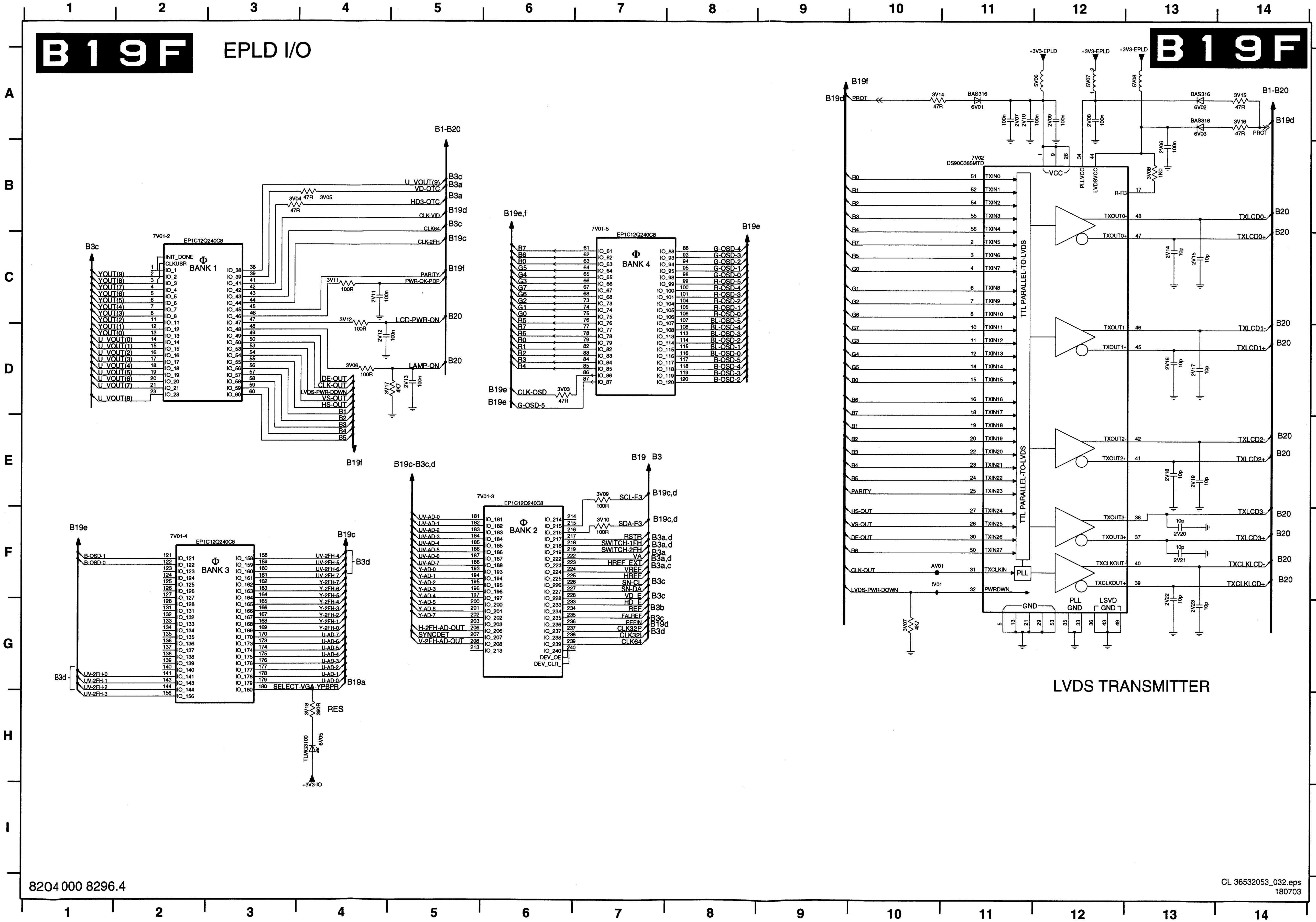
7E23	A5
7E24	B8
FE01	I7
FE02	F7
FE03	D7
FE04	C7
FE05	A13
FE06	A7
IE01	A11
IE02	A11
IE03	A11
IE04	G11
IE05	G11
IE06	G12
IE07	A4
IE08	A5

SSB (AA): EPLD I/O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B19F
7V01-2
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CLKUSR
B3c
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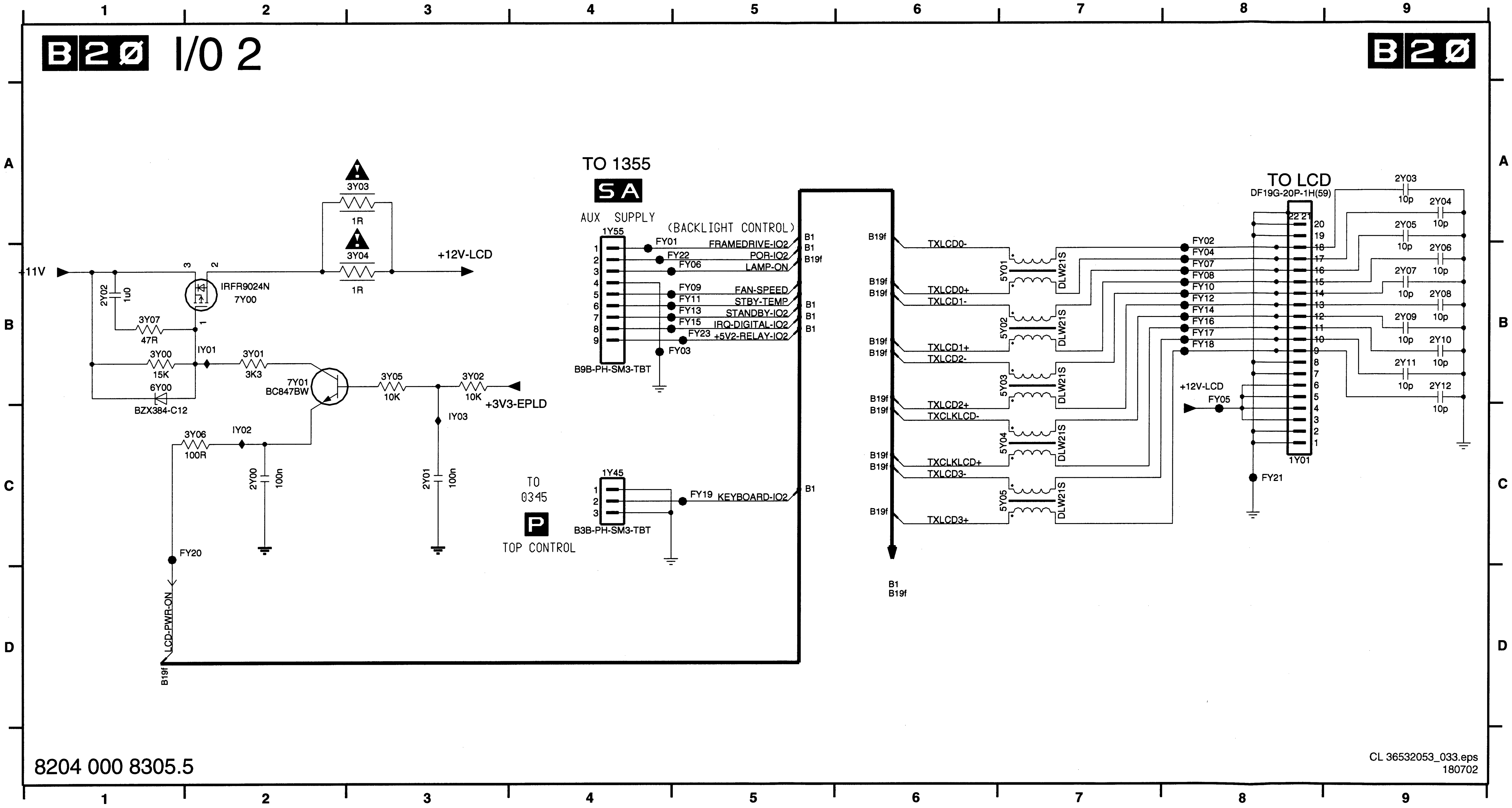
YOUT(8)
YOUT(7)
YOUT(6)
YOUT(5)
YOUT(4)
YOUT(3)
YOUT(2)
YOUT(1)
YOUT(0)
U_VOUT(0)
U_VOUT(1)
U_VOUT(2)
U_VOUT(3)
U_VOUT(4)
U_VOUT(5)
U_VOUT(6)
U_VOUT(7)
U_VOUT(8)
B1-B20
U_VOUT(9)
VD-OTC
HD3-OTC
CLK-VID
CLK64
CLK-2FH
PARITY
PWR-OK-PDP
LCD-PWR-ON
LAMP-ON
3V04 47R
3V05 47R
3V11 100R
3V12 100R
3V06 100R
2V11 100n
2V12 100n
3V17 4K7
2V13 100n
B3c
B3a
B3a
B19d
B3c
B19c
B19f
B20
B20
DE-OUT
CLK-OUT
LVDS-PWR-DOWN
VS-OUT
HS-OUT
B1
B2
B3
B4
B5
B19f
B19e,f
7V01-5
EP1C12Q240C8
BANK 4
B7
B6
B0
G5
G4
G3
G7
G6
G2
G1
G0
R5
R7
R6
R0
R1
R2
R3
R4
B19e
G-OSD-4
G-OSD-3
G-OSD-2
G-OSD-1
G-OSD-0
R-OSD-5
R-OSD-4
R-OSD-3
R-OSD-2
R-OSD-1
R-OSD-0
BL-OSD-5
BL-OSD-4
BL-OSD-3
BL-OSD-2
BL-OSD-1
BL-OSD-0
B-OSD-5
B-OSD-4
B-OSD-3
B-OSD-2
B19e CLK-OSD
B19e G-OSD-5
3V03 47R
B19c-B3c,d
7V01-3
EP1C12Q240C8
BANK 2
UV-AD-0
UV-AD-1
UV-AD-2
UV-AD-3
UV-AD-4
UV-AD-5
UV-AD-6
UV-AD-7
Y-AD-0
Y-AD-1
Y-AD-2
Y-AD-3
Y-AD-4
Y-AD-5
Y-AD-6
Y-AD-7
H-2FH-AD-OUT
SYNCDET
V-2FH-AD-OUT
B19 B3
3V09 100R
SCL-F3
B19c,d
3V10 100R
SDA-F3
B19c,d
RSTR
SWITCH-1FH
SWITCH-2FH
VA
HREF_EXT
VREF
HREF
SN-CL
SN-DA
VD_E
HD_E
REF
FALREF
REFIN
CLK32P
CLK32I
CLK64
DEV_OE
DEV_CLR
B3a,d
B3a,d
B3a
B3a,d
B3a,c
B3c
B3c
B3b
B3c
B19d
B3d
B19e
7V01-4
EP1C12Q240C8
BANK 3
B-OSD-1
B-OSD-0
B3d
UV-2FH-0
UV-2FH-1
UV-2FH-2
UV-2FH-3
B19c
UV-2FH-4
UV-2FH-5
UV-2FH-6
UV-2FH-7
Y-2FH-6
Y-2FH-7
Y-2FH-5
Y-2FH-4
Y-2FH-3
Y-2FH-2
Y-2FH-1
Y-2FH-0
U-AD-7
U-AD-6
U-AD-5
U-AD-4
U-AD-3
U-AD-2
U-AD-1
U-AD-0
SELECT-VGA-YPBPR
B19a
B3d
3V18 390R
RES
TLMG3100
6V05
+3V3-IO
B19f
B19d
PROT
3V14 47R
BAS316 6V01
+3V3-EPLD
+3V3-EPLD
+3V3-EPLD
5V06
5V07
5V08
2V07 100n
2V10 100n
2V09 100n
2V08 100n
BAS316 6V02
3V15 47R
BAS316 6V03
3V16 47R
B1-B20
B19d
PROT
2V06 100n
3V08 1K0
7V02
DS90C385MTD
VCC
PLLVCC
LVDSVCC
R-FB
TTL PARALLEL-TO-LVDS
TTL PARALLEL-TO-LVDS
TXIN0
TXIN1
TXIN2
TXIN3
TXIN4
TXIN5
TXIN6
TXIN7
TXIN8
TXIN9
TXIN10
TXIN11
TXIN12
TXIN13
TXIN14
TXIN15
TXIN16
TXIN17
TXIN18
TXIN19
TXIN20
TXIN21
TXIN22
TXIN23
TXIN24
TXIN25
TXIN26
TXIN27
TXCLKIN
PWRDWN
PLL
TXOUT0-
TXOUT0+
TXOUT1-
TXOUT1+
TXOUT2-
TXOUT2+
TXOUT3-
TXOUT3+
TXCLKOUT-
TXCLKOUT+
TXLCD0-
TXLCD0+
TXLCD1-
TXLCD1+
TXLCD2-
TXLCD2+
TXLCD3-
TXLCD3+
TXCLKLCD-
TXCLKLCD+
B20
2V14 10p
2V15 10p
2V16 10p
2V17 10p
2V18 10p
2V19 10p
2V20 10p
2V21 10p
2V22 10p
2V23 10p
GND
PLL GND
LVDS GND
PARITY
HS-OUT
VS-OUT
DE-OUT
CLK-OUT
LVDS-PWR-DOWN
AV01
IV01
3V07 4K7
LVDS TRANSMITTER
8204 000 8296.4
CL 36532053_032.eps
180703

2V06	B13
2V07	A11
2V08	A12
2V09	A12
2V10	A11
2V11	C4
2V12	D4
2V13	D5
2V14	C13
2V15	C13
2V16	D13
2V17	D13
2V18	E13
2V19	E13
2V20	F13
2V21	F13
2V22	F13
2V23	G13
3V03	D6
3V04	B3
3V05	B4
3V06	D4
3V07	G10
3V08	B13
3V09	E7
3V10	F7
3V11	C4
3V12	C4
3V14	A10
3V15	A14
3V16	A14
3V17	D4
3V18	H4
5V06	A12
5V07	A12
5V08	A13
6V01	A11
6V02	A13
6V03	A13
6V05	H4
7V01-2	C2
7V01-3	E6
7V01-4	F2
7V01-5	B7
7V02	B11
AV01	F10
IV01	F10

SSB (AA): I/O 2

1Y01	**C8**
1Y45	**C4**
1Y55	**A4**
2Y00	**C2**
2Y01	**C3**
2Y02	**B1**
2Y03	**A9**
2Y04	**A9**
2Y05	**A9**
2Y06	**B9**
2Y07	**B9**
2Y08	**B9**
2Y09	**B9**
2Y10	**B9**
2Y11	**B9**
2Y12	**B9**
3Y00	**B1**
3Y01	**B2**
3Y02	**B3**
3Y03	**A3**
3Y04	**B3**
3Y05	**B3**
3Y06	**C2**
3Y07	**B1**
5Y01	**B7**
5Y02	**B7**
5Y03	**B7**
5Y04	**C7**
5Y05	**C7**
6Y00	**B1**
7Y00	**B2**
7Y01	**B2**
FY01	**B4**
FY02	**B8**
FY03	**B5**
FY04	**B8**
FY05	**B8**
FY06	**B5**
FY07	**B8**
FY08	**B8**
FY09	**B5**
FY10	**B8**
FY11	**B5**
FY12	**B8**
FY13	**B5**
FY14	**B8**
FY15	**B5**
FY16	**B8**
FY17	**B8**
FY18	**B8**
FY19	**C5**
FY20	**C2**
FY21	**C8**
FY22	**B5**
FY23	**B5**
IY01	**B2**
IY02	**C2**
IY03	**C3**



B20 I/0 2
B20
1 2 3 4 5 6 7 8 9
A B C D
+11V
2Y02 1u0
3Y07 47R
3Y00 15K
6Y00 BZX384-C12
IRFR9024N 7Y00
3Y03 1R
3Y04 1R
+12V-LCD
IY01
3Y01 3K3
7Y01 BC847BW
3Y05 10K
3Y02 10K
+3V3-EPLD
IY03
3Y06 100R
IY02
2Y00 100n
2Y01 100n
FY20
LCD-PWR-ON
B19f
TO 1355
SA
AUX SUPPLY
(BACKLIGHT CONTROL)
1Y55
B9B-PH-SM3-TBT
FY01 FRAMEDRIVE-IO2
FY22 POR-IO2
FY06 LAMP-ON
FY09 FAN-SPEED
FY11 STBY-TEMP
FY13 STANDBY-IO2
FY15 IRQ-DIGITAL-IO2
FY23 +5V2-RELAY-IO2
FY03
B1 B19f
TO 0345
P
TOP CONTROL
1Y45
B3B-PH-SM3-TBT
FY19 KEYBOARD-IO2
TXLCD0-
TXLCD0+
TXLCD1-
TXLCD1+
TXLCD2-
TXLCD2+
TXCLKLCD-
TXCLKLCD+
TXLCD3-
TXLCD3+
5Y01 5Y02 5Y03 5Y04 5Y05
DLW21S
FY02 FY04 FY07 FY08 FY10 FY12 FY14 FY16 FY17 FY18
+12V-LCD
FY05
FY21
TO LCD
DF19G-20P-1H(59)
1Y01
2Y03 10p
2Y04 10p
2Y05 10p
2Y06 10p
2Y07 10p
2Y08 10p
2Y09 10p
2Y10 10p
2Y11 10p
2Y12 10p
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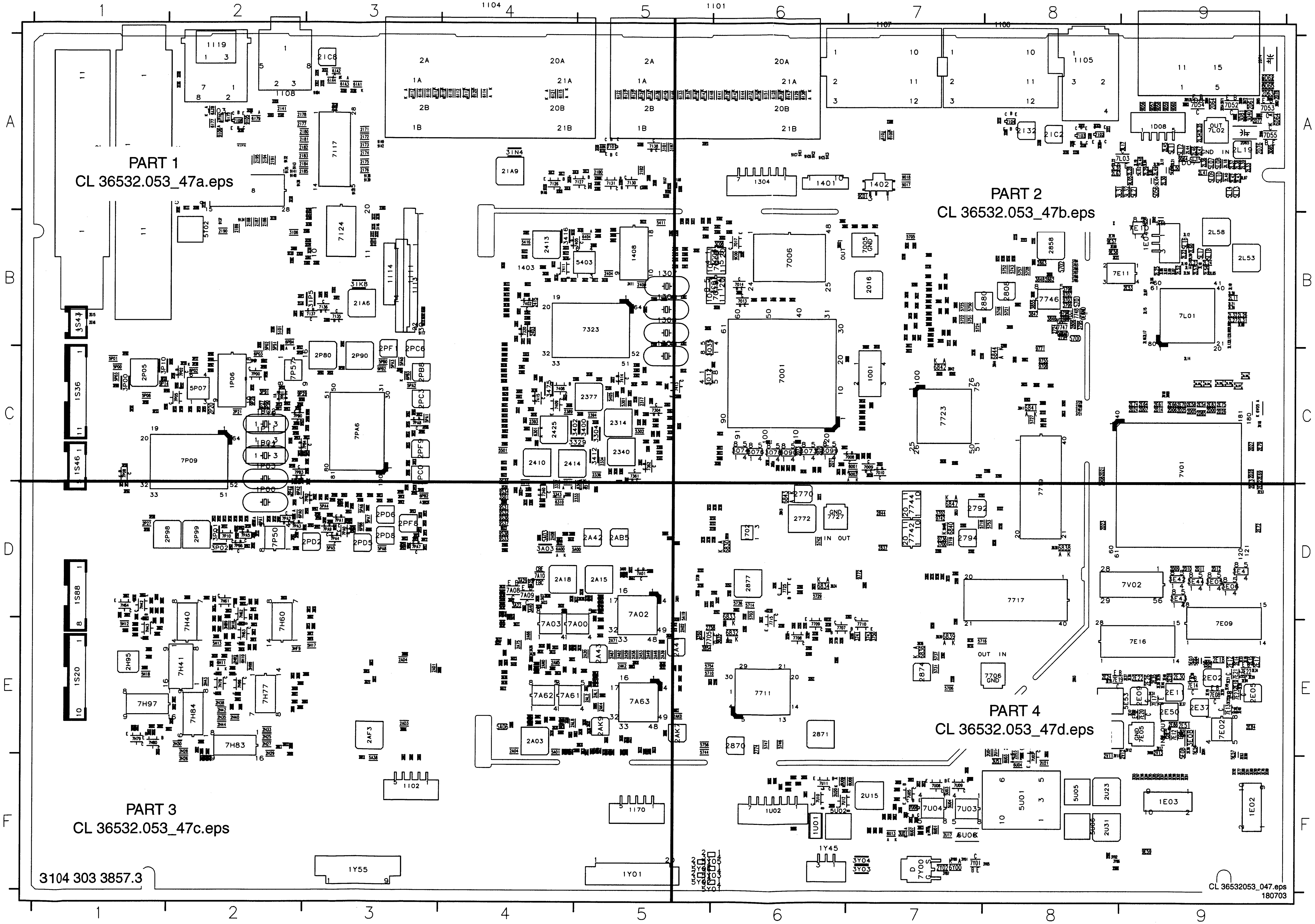
CL 36532053_033.eps
180702

Layout SSB (AA) (Top Side Overview)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PART 2
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PART 3
CL 36532.053_47c.eps
PART 4
CL 36532.053_47d.eps
3104 303 3857.3
CL 36532053_047.eps
180703
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F

Layout SSB (AA) Mapping (Top Side)

1001	C7	2331	C5	2754	B8	2A20	E5	2AL5	E5	2E84	E9	2I94	A2	2P35	D2	3011	C6	3437	B5	3825	B7	3AB9	E4	3H49	E1	3IA9	A8	3P34	D1	3U09	E8	5A01	E4	6833	D6	7010	C7	7I17	A3	9763	C8	9PB3	D2
1304	A6	2332	C5	2755	E6	2A21	D5	2AL6	E5	2E86	E9	2I95	A2	2P36	D2	3012	C5	3439	B4	3826	B7	3AC8	E5	3H68	E3	3IB0	A8	3P35	D1	3U10	F7	5A03	D4	6834	D6	7013	B6	7I18	A2	9764	C7	9PB4	D3
1305	C5	2333	D5	2758	E5	2A22	D4	2AL8	E4	2E87	E8	2I96	A2	2P37	D2	3018	C6	3442	C4	3827	B7	3C01	B6	3H69	E2	3IC0	A2	3P41	D2	3U11	E8	5A06	E4	6836	E7	7014	B6	7I24	B3	9765	C7	9PB5	C2
1306	B5	2334	C5	2763	D7	2A23	E4	2AL9	E4	2E88	F9	2I97	A2	2P38	D2	3019	C6	3443	C4	3829	B8	3C03	B6	3H70	E2	3IC9	A2	3P42	D2	3U13	F7	5A16	E4	6838	D8	7017	B6	7I26	A4	9766	B7	9S01	C4
1307	B5	2336	C5	2764	E6	2A25	E4	2ALA	E5	2E89	F9	2I98	A2	2P39	C2	3020	C6	3444	C4	3832	E6	3C06	B6	3H75	E2	3ID3	A2	3P43	D2	3U14	E8	5A17	E4	6839	E7	7018	B6	7I27	A5	9771	C8	9S02	C4
1308	B5	2339	B5	2767	E7	2A26	D4	2AM0	E4	2E90	F9	2IA6	B3	2P40	C2	3021	C6	3447	C4	3833	E6	3C07	B5	3H76	E2	3II8	A2	3P44	D1	3U15	F7	5A18	E4	6840	D7	7019	B6	7I30	A5	9772	D7	9S03	C4
1401	A6	2340	C5	2770	D6	2A27	D5	2AM1	E4	2E91	F9	2IA9	A4	2P41	C2	3024	C6	3448	C4	3834	D6	3C08	B6	3H80	E2	3II9	B2	3P61	C3	3U16	F7	5A19	D5	6841	C8	7304	C5	7I31	A5	9A04	D5	9S04	B4
1402	A7	2344	B6	2771	D6	2A29	E5	2AM2	E4	2E92	F9	2IB0	A5	2P42	C2	3025	C7	3449	C5	3835	E6	3C09	C6	3H81	E2	3IJ0	A3	3P77	D2	3U17	F7	5A23	E4	6842	C7	7320	B4	7I35	B3	9A05	D5	9S05	B4
1403	B4	2347	B6	2772	D6	2A30	D4	2AM3	E5	2E93	F9	2IB2	A5	2P44	D2	3026	C7	3460	C5	3836	E7	3D40	A9	3H83	E2	3IJ1	A3	3P78	D2	3U18	F7	5A24	E4	6843	D6	7323	C4	7I36	B3	9A06	D5	9S06	B4
1408	B5	2348	B5	2774	E6	2A31	E4	2AM5	E4	2E94	F9	2IC2	A8	2P50	C2	3027	C6	3461	C5	3838	D8	3D53	A9	3H84	E2	3IK0	B2	3P90	C2	3U19	F7	5A37	D4	6844	C8	7340	D4	7I37	B3	9A60	E5	9S07	B4
1702	D6	2349	B5	2776	D8	2A32	E5	2AM6	E4	2E95	F9	2IC7	A3	2P80	C3	3033	C7	3462	C5	3839	E7	3D54	A9	3H85	E2	3IK8	B3	3P91	C2	3U20	F7	5A38	F3	6847	D7	7361	D5	7I38	A5	9A61	D5	9S08	B4
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1D07	F8	2351	C4	2782	D7	2A35	D5	2AM8	E5	2E97	F9	2IE0	B2	2P86	D2	3039	C7	3473	C5	3841	C8	3D66	A9	3H93	E3	3IL1	A4	3PA0	D3	3U22	F7	5A61	E5	6D62	A9	7402	B4	7L02	A9	9C00	B6	9S10	B4
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1I11	B3	2365	B4	2806	B8	2A49	E5	2D06	C9	2H18	E2	2L14	C9	2PB7	D3	3080	C6	3714	D6	3A00	D5	3E20	E9	3HA9	E1	3IN4	A4	3PB3	D3	3V06	E9	5E58	B9	6I16	A3	7710	E7	7PA3	D2	9E59	F9	9S23	C4
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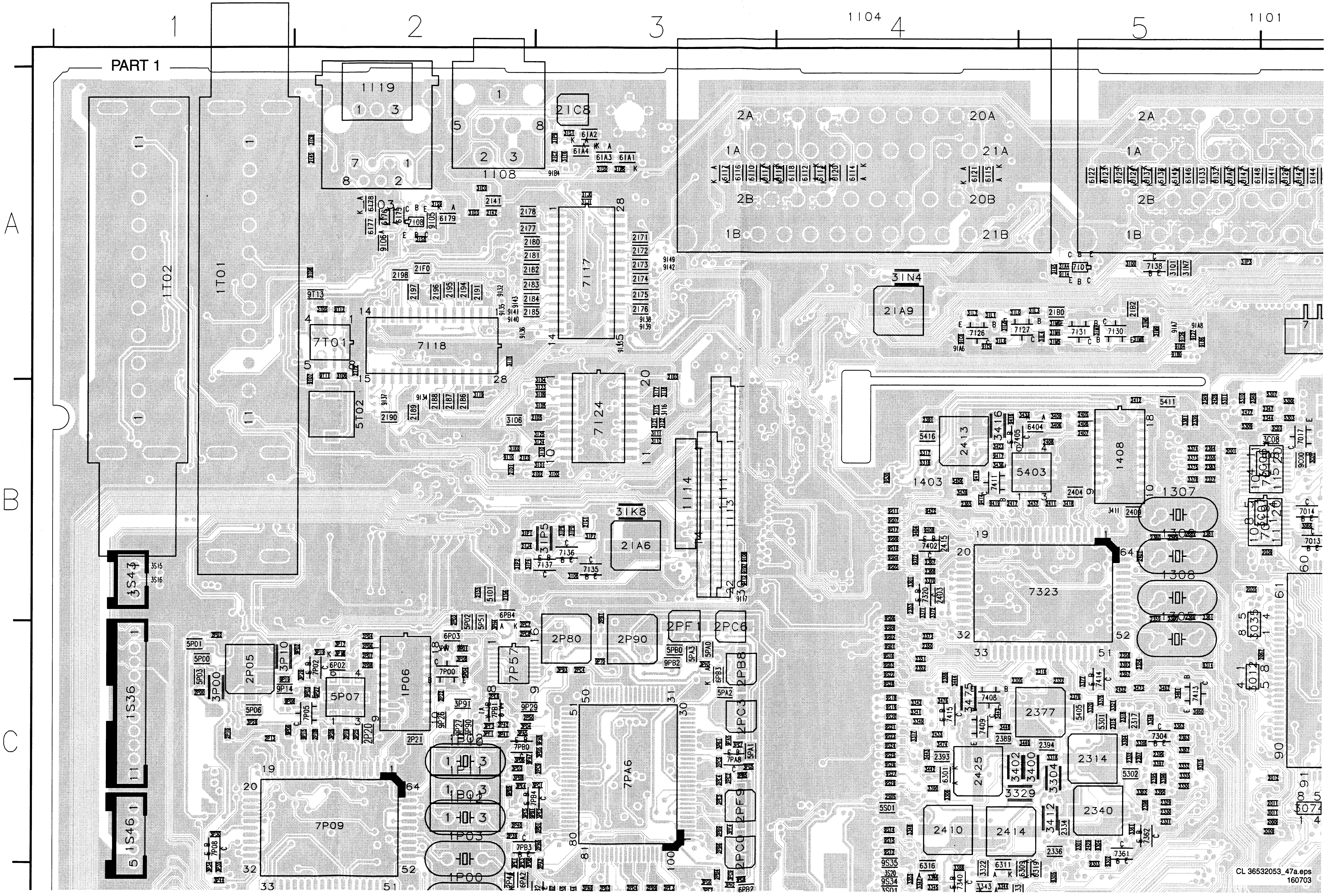
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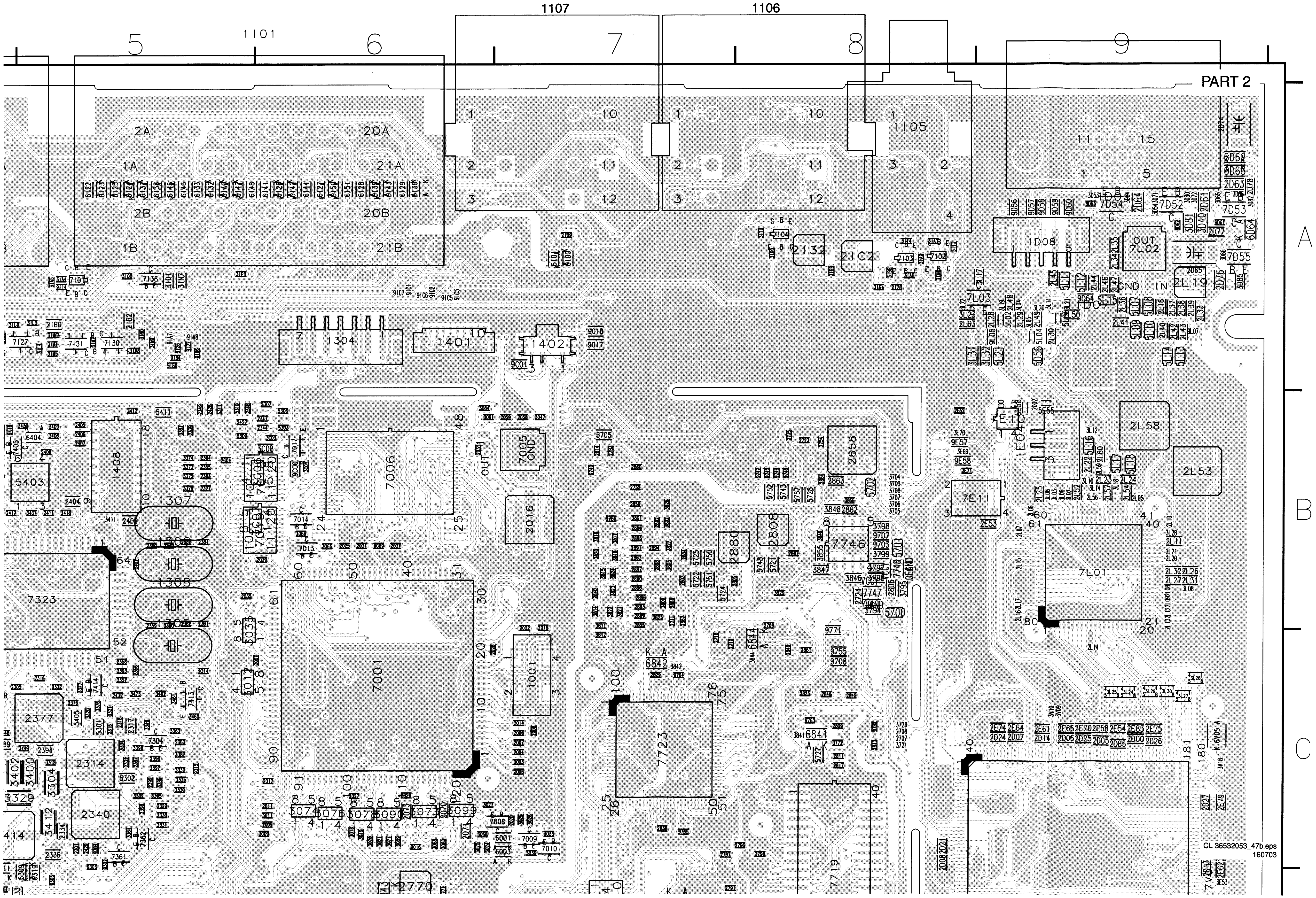
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PART 2
A
B
C
2A
20A
1A
21A
2B
20B
1B
21B
1105
1D08
OUT
7L02
IN
2L19
GND
7L03
7D54
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7D53
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2132
21C2
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7102
7104
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1401
1402
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9017
9C01
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5403
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3329
3412
2336
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7362
7304
7413
7414
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7005
GND
2016
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7013
7001
1001
7008
6001
6003
7009
7010
2770
7723
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6841
6844
2858
2863
2880
2808
7746
7747
7748
5700
5701
5702
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9755
9708
7719
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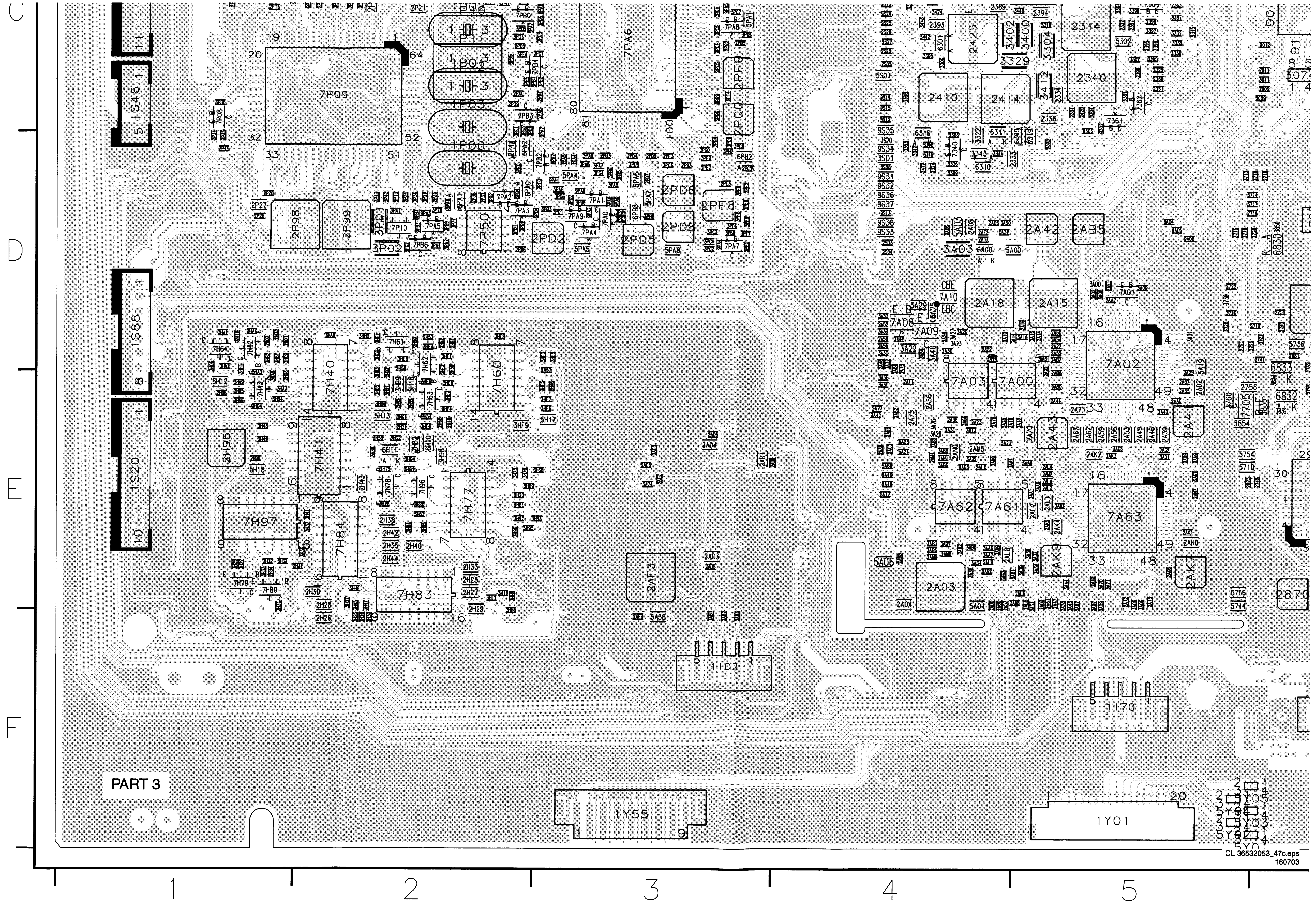
160703

Layout SSB (AA) (Top Side Part 3)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D
E
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3
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5
PART 3
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1P03
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2PC0
2P98
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7P50
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2PF8
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7A03
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7A63
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2A4
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2A03
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7A09
7A10
3A03
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7H60
7H41
7H77
7H97
7H84
7H83
2H95
2AF3
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1Y01
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6832
6833

CL 36532053_47c.eps
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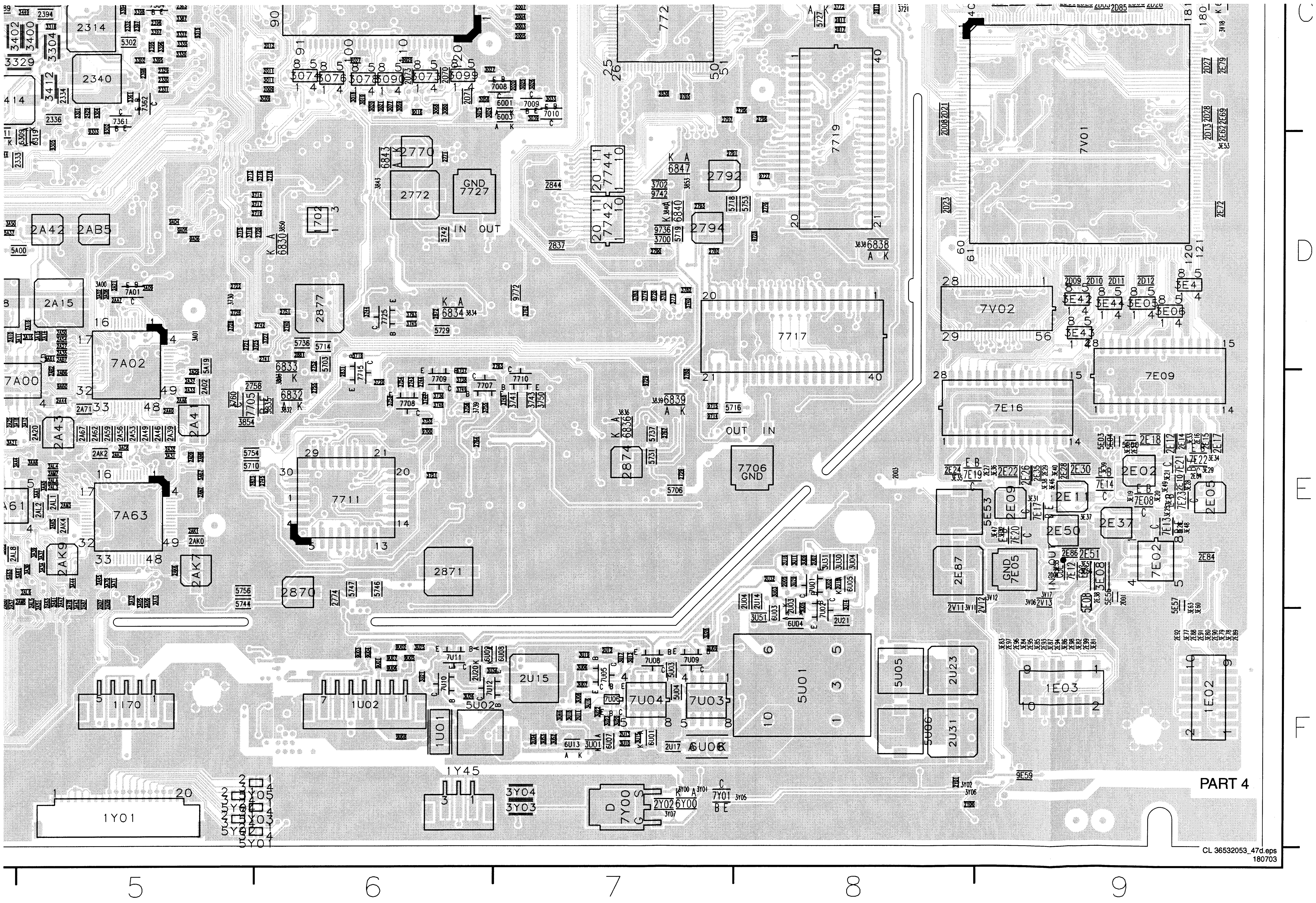
Layout SSB (AA) (Top Side Part 4)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2A43
7A61
2770
2772
GND 7727
IN OUT
2877
7711
2871
2870
6834
6830
6833
6832
7705
7709
7707
7710
7708
7715
7725
772
7744
7742
2792
2794
6847
6840
6838
7719
7717
6839
6836
2874
7706 GND
OUT IN
7V01
7V02
7E16
7E09
2E02
2E05
2E11
2E50
2E37
7E02
2E87
GND 7E05
2E84
5E53
2E09
1I70
1U02
1U01
5U02
2U15
7U04
7U03
5U01
5U05
2U23
5U06
2U31
6U06
1E03
1E02
1Y01
1Y45
3Y04
3Y03
7Y00
2Y02
6Y00
7Y01
9E59
PART 4
C
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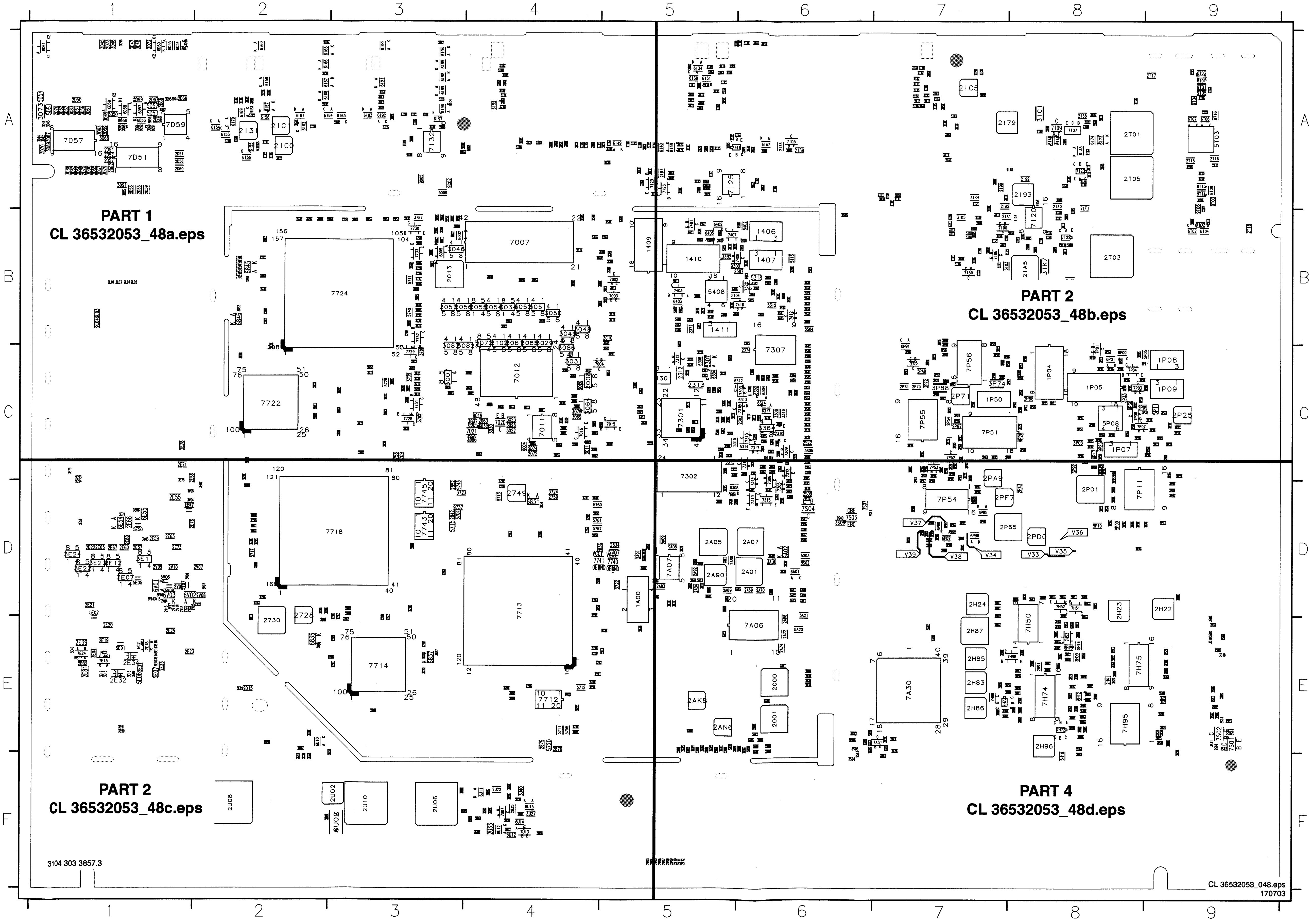
180703

Layout SSB (AA) (Bottom Side Overview)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A
B
C
D
E
F
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PART 2
CL 36532053_48b.eps
PART 2
CL 36532053_48c.eps
PART 4
CL 36532053_48d.eps
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7D59
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7722
7007
7012
7011
1409
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1406
1407
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1411
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7301
7302
7718
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7714
2730
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7712
1A00
2A05
2A07
2A90
2A01
7A06
2000
2001
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2AN6
7A30
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2T05
2T03
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2193
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1P05
1P08
1P09
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7P55
7P56
7P54
1P07
2P25
2P01
7P11
2P65
2H24
2H87
2H85
2H83
2H86
2H96
7H50
7H74
7H75
7H95
2H23
2H22
2U08
2U02
2U10
2U06
3104 303 3857.3
CL 36532053_048.eps
170703

Layout SSB (AA) Mapping (Bottom Side)

1301	C5
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1306	B5
1307	B5
1308	B5
1406	B6
1407	B6
1409	B5
1410	B5
1411	B5
1A00	D5
1D01	A1
1D07	B2
1I01	A4
1I03	A8
1I04	A6
1I05	A2
1I06	A2
1I07	A3
1I08	A8
1I19	A8
1P00	D8
1P01	C8
1P02	C8
1P03	C8
1P04	C8
1P05	C8
1P07	C8
1P08	B9
1P09	C9
1P10	C8
1P11	C8
1P12	C8
1P50	C8
1S20	E9
1S36	C9
1S43	B9
1S46	C9
1S88	D9
1T01	A9
1T02	A9
2000	E6
2001	E6
2003	C3
2010	C5
2013	B3
2017	B5
2019	B4
2022	C4
2023	B4
2024	C4
2026	B4
2033	B4
2036	B4
2038	B4
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2345	B5
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2369	C6
2370	C6
2371	B5
2372	B5
2374	C6
2375	B6
2378	B5
2384	B6
2385	C6
2386	C6
2387	B6
2390	B6
2402	B6
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2419	B5
2420	C6
2421	B6
2422	B6
2423	B6
2424	C6
2426	B5
2431	C5
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2702	B2
2703	B2
2704	B2
2705	B2
2706	B2
2712	C2
2713	E4
2714	E5
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2725	C3
2726	C3
2727	B3
2728	E2
2730	E2
2731	B2
2732	B2
2733	B2
2734	B3
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2738	B3
2739	B3
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2795	C3
2799	D2
2800	D2
2801	D2
2802	D2
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2815	C3
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2822	C2
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2E68	D1
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3001	C4
3002	C4
3004	B4
3005	C4
3006	C3
3007	C3
3008	C4
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3014	B5
3015	B5
3016	B5
3017	C4
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3023	C4
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3029	B4
3030	C4
3031	C4
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3037	C4
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3041	C5
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3098	B3
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3308	C6
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3312	C6
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3315	C6
3316	C6
3319	C6
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3408	B5
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3468	C6
3470	D6
3471	D6
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3709	E4
3710	E4
3711	C3
3712	D4
3722	D5
3723	D3
3724	D4
3731	D4
3732	D4
3733	D4
3758	E4
3759	D4
3764	E4
3765	E4
3766	E2
3767	E3
3770	D3
3771	C3
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3786	C3
3787	B3
3788	C3
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3791	C3
3792	B2
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3805	B3
3806	B3
3807	C3
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3809	B3
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3813	B3
3816	B3
3828	C3
3831	D4
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3845	E2
3851	B2
3852	B2
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3A77	E7
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9P58	C8
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9P63	C7
9P64	C7
9P65	C8
9P69	C7
9P71	C7
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9T02	B9
9T03	A9
9T04	A9
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9T09	A9
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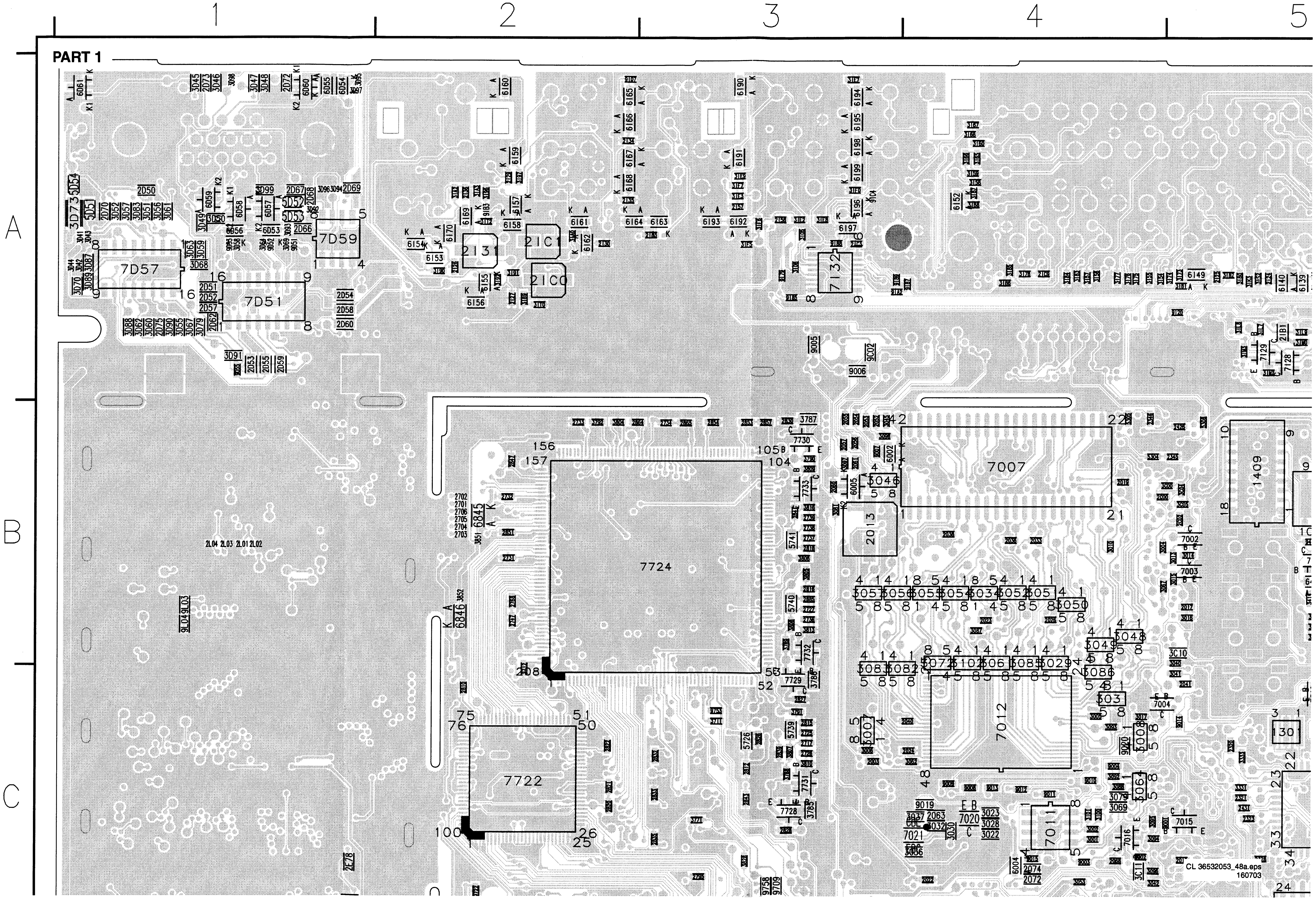
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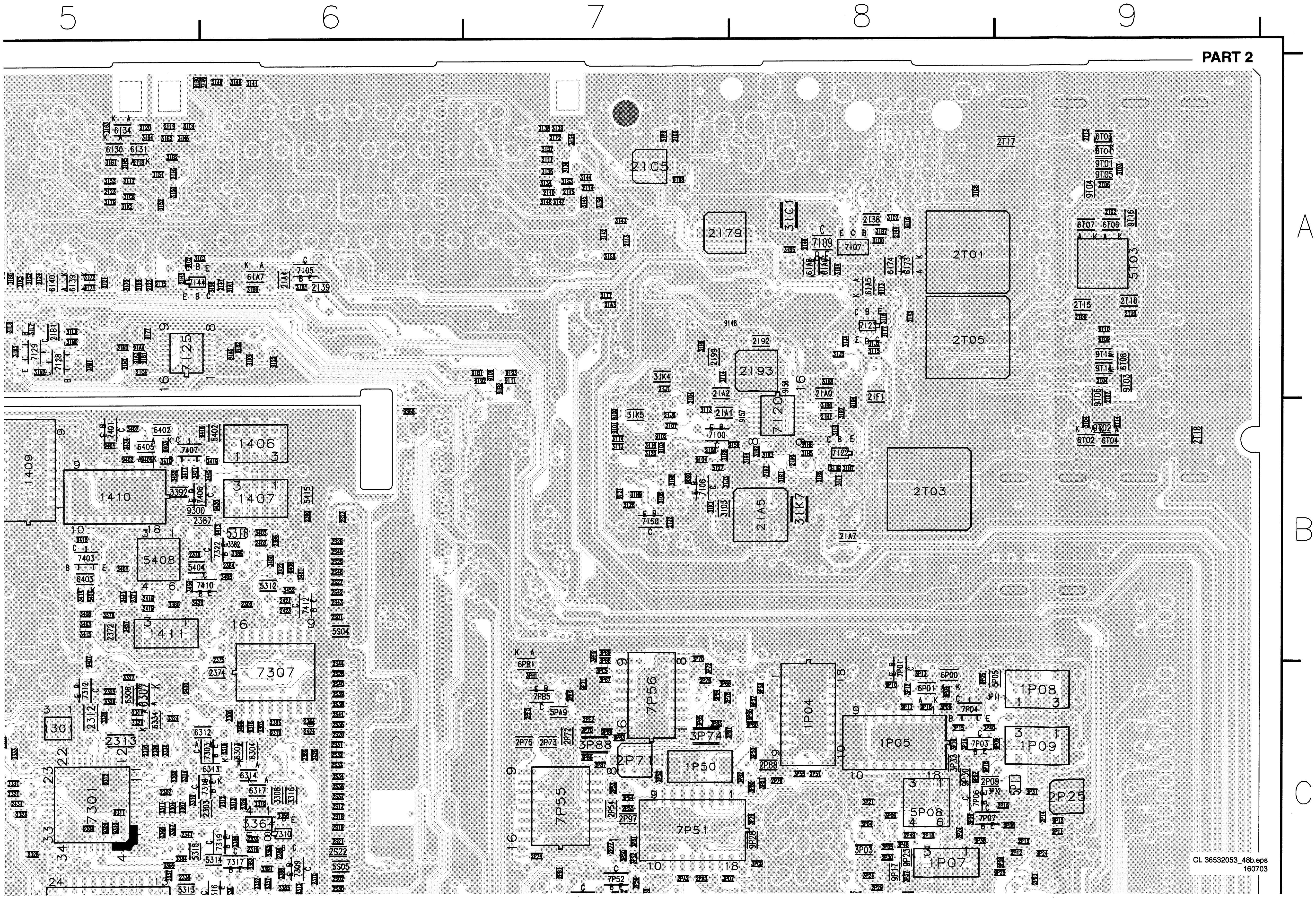
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21A5
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2T03
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1P04
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1P09
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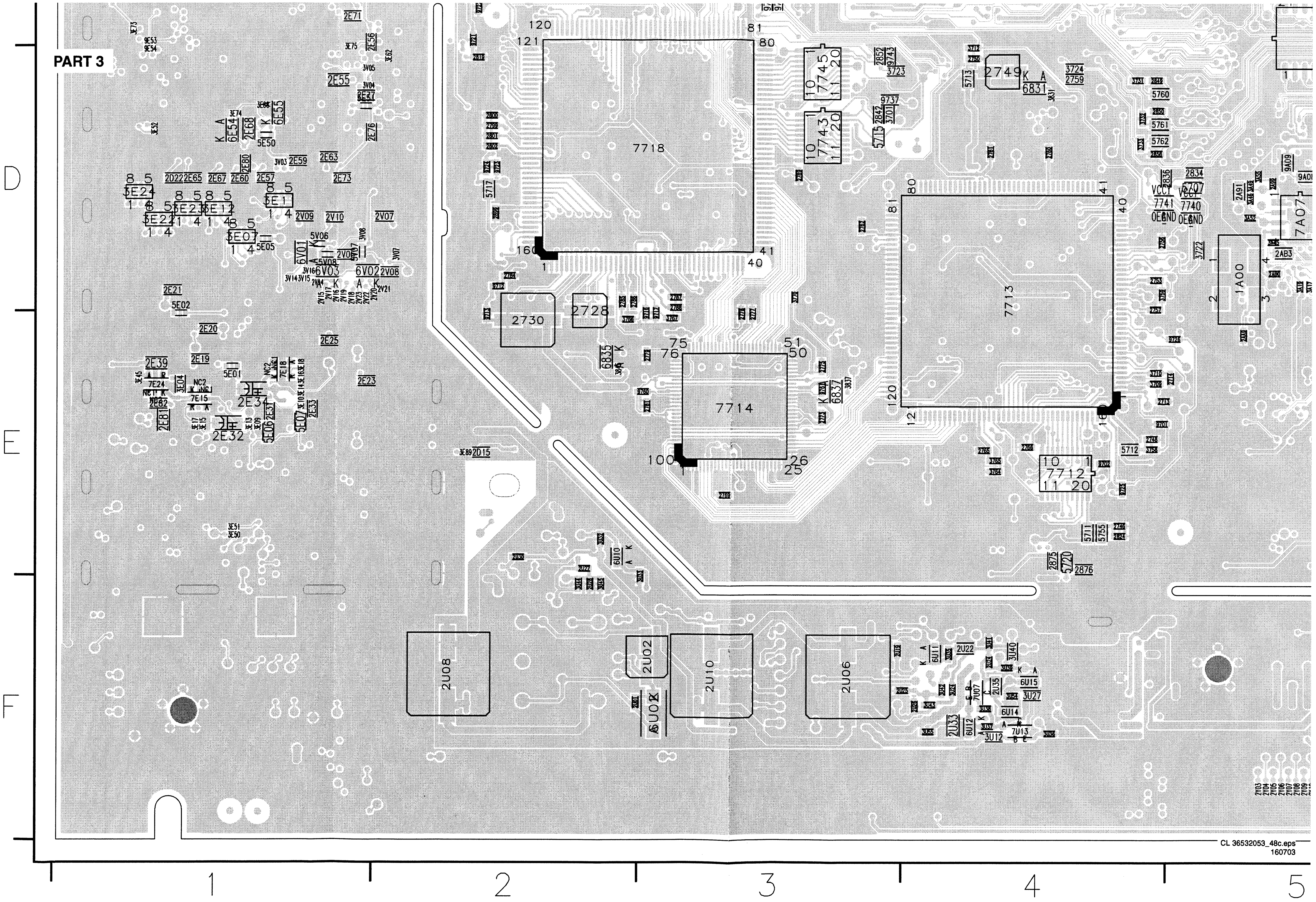
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2U06
6U0
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6U11
6U12
6U14
6U15
7U07
7U13
2U22
2U33
2U35
3U12
3U27
3U40
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3701
7740
7741
VCC
0E GND
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2AB3
9A09
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2E73
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5E12
5E11
5E07
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5E05
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6E55
6V01
6V02
6V03
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2V08
2V09
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E
F
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2
3
4
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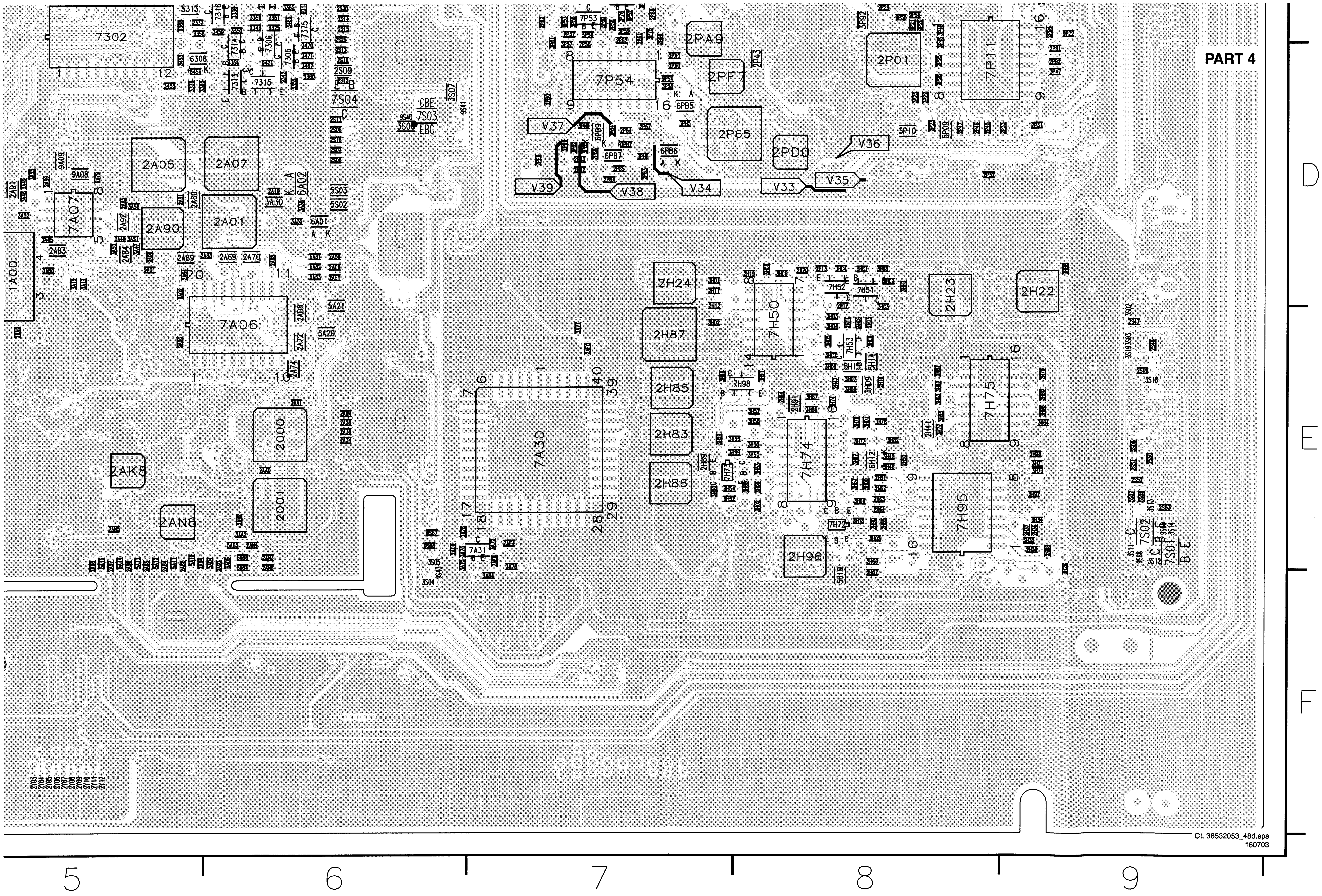
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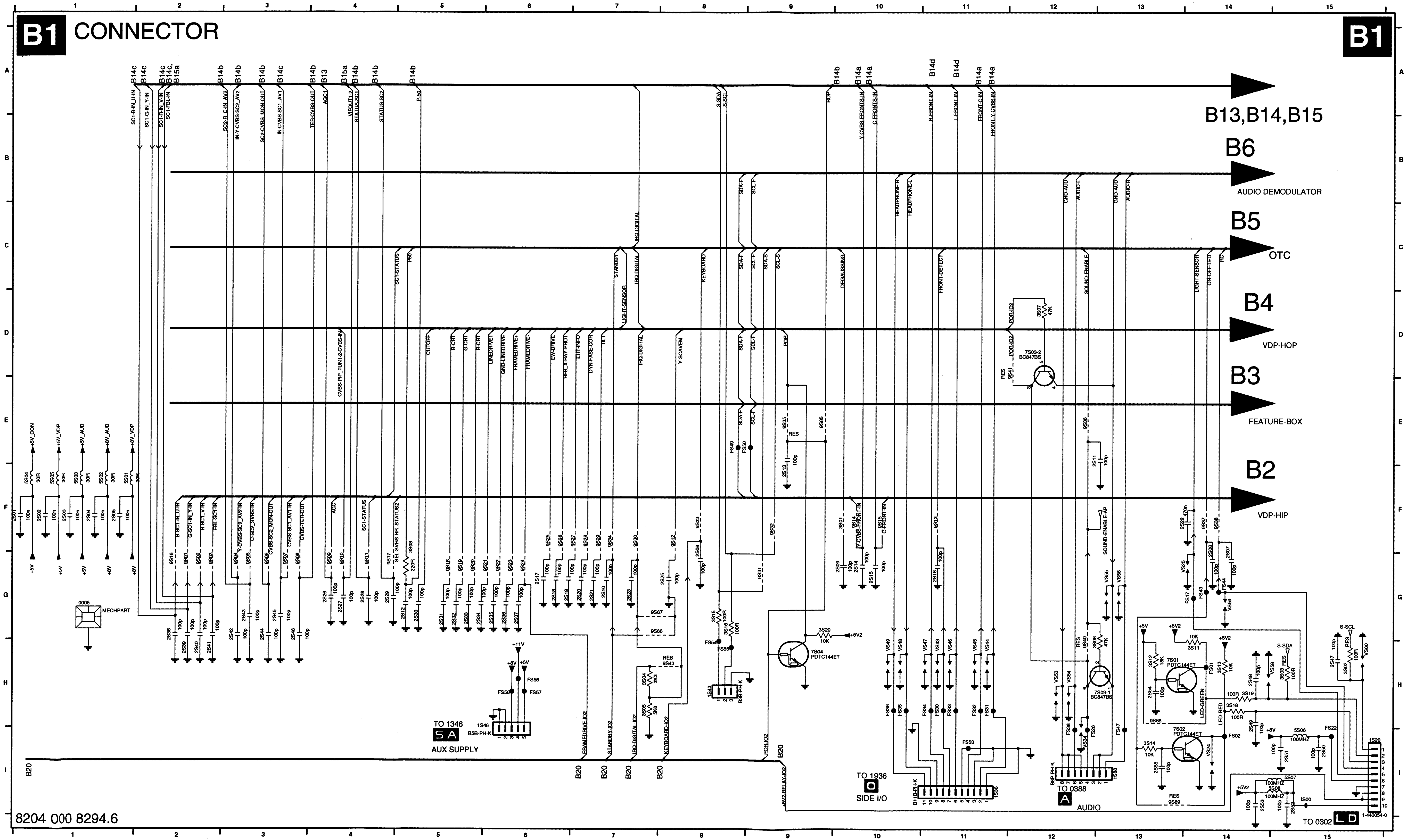
V36
V39
V38
V34
V33
V35
7S03
7S04
2A05
2A07
7A07
2A90
2A01
1A00
7A06
2000
2001
2AK8
2AN6
7A30
7A31
2H24
2H87
2H85
2H83
2H86
7H50
7H52
7H51
2H23
2H22
7H75
7H74
7H95
2H96
7H98
7S02
7S01
D
E
F
5
6
7
8
9

CL 36532053_48d.eps
160703

SSB (AB): Connector

0005	G1
1S20	I15
1S36	I11
1S43	H8
1S46	H6
1S88	I13
2S01	F1
2S02	F1
2S03	F1
2S04	F1
2S05	F1
2S06	F14
2S07	F14
2S08	F8
2S09	G10
2S10	G7
2S11	E12
2S12	G5
2S13	F9
2S14	G10
2S15	G10
2S16	G11
2S17	G6
2S18	G6
2S19	G6
2S20	G7
2S21	G7
2S22	F14
2S23	G7
2S25	G8
2S26	G4
2S27	G4
2S28	G4
2S29	G4
2S30	G5
2S31	G5
2S32	G5
2S33	G5
2S34	G5
2S35	G6
2S36	G6
2S37	G6
2S38	G2
2S39	H2
2S40	H2
2S41	H2
2S42	G3
2S43	G3
2S44	G3
2S45	G3
2S46	G3
2S47	H15
2S48	H14
2S49	H14
2S50	I15
2S51	I15
2S52	I15
2S53	I14
2S54	H13
2S55	I13
3S01	F10
3S02	H15
3S03	H15
3S04	H7
3S05	H7
3S06	H13
3S07	D12
3S08	F5
3S11	H14
3S12	H13
3S13	H14
3S14	I13
3S15	G8
3S16	G8
3S18	H14
3S19	H14
3S20	G9
5S01	F1
5S02	F1
5S03	F1
5S04	F1
5S05	F1
5S06	I15
5S07	I15
5S08	I15
7S01	H13
7S02	I13
7S03-1	H13
7S03-2	D12
7S04	H9
9S01	G2
9S02	G2
9S03	G2
9S04	G3
9S05	G3
9S06	G3
9S07	G3
9S08	G3
9S09	G4
9S10	G4
9S11	G4
9S12	F8
9S13	F11
9S14	F10
9S15	F10
9S16	G2
9S17	G4
9S18	G5
9S19	G5
9S20	G5
9S21	G6
9S22	G6
9S23	G6
9S24	G6
9S25	F6
9S26	F6
9S27	F7
9S28	F7
9S29	F7
9S30	F7
9S31	G9
9S32	F9
9S33	F8
9S34	F7
9S35	E9
9S36	E12
9S37	F14
9S38	F14
9S40	H12
9S41	D12
9S43	H8
9S65	E9
9S66	G7
9S67	G7
9S68	H13
9S69	I13
FS01	H14
FS02	I14
FS17	G14
FS22	H15
FS26	I12
FS30	H11
FS31	H11
FS32	H11
FS33	H11
FS34	H11
FS35	H10
FS36	H10
FS38	I12
FS43	G14
FS44	G14
FS47	I13
FS49	E8
FS50	E8
FS53	I11
FS54	H8
FS55	H8
FS56	H6
FS57	H6
FS58	H6
IS00	I15
VS24	I14
VS25	G14
VS34	I12
VS43	H11
VS44	H11
VS45	H11
VS46	H11
VS47	H11
VS48	H10
VS49	H10
VS53	H12
VS54	H12
VS55	G13
VS56	G13
VS58	H14
VS59	G14
VS60	H15

B1 CONNECTOR



B1
B13,B14,B15
B6
AUDIO DEMODULATOR
B5
OTC
B4
VDP-HOP
B3
FEATURE-BOX
B2
VDP-HIP
B14c
B15a
B14b
B13
B14a
B14d
SC1-B-IN_U-IN
SC1-G-IN_Y-IN
SC1-R-IN_V-IN
SC1-FBL-IN
SC2-R_C-IN_AV2
IN-Y-CVBS-SC2_AV2
SC2-CVBS_MON-OUT
IN-CVBS-SC1_AV1
TER-CVBS-OUT
AGC1
STATUS-SC1
STATUS-SC2
P-50
S-SDA
S-SCL
HOP
Y-CVBS-FRONT-IN
C-FRONT-IN
R-FRONT-IN
L-FRONT-IN
FRONT-C-IN
FRONT-Y-CVBS-IN
HEADPHONE-R
HEADPHONE-L
GND-AUD
AUDIO-L
AUDIO-R
STANDBY
IRQ-DIGITAL
LIGHT-SENSOR
KEYBOARD
SDA-F
SCL-F
SDA-S
SCL-S
DEGAUSSING
FRONT-DETECT
SOUND-ENABLE
ON-OFF-LED
RC
CVBS-PIP_TUN1-2-CVBS-IN
CUTOFF
B-CRT
G-CRT
R-CRT
LINEDRIVE
GND-LINEDRIVE
FRAMEDRIVE+
FRAMEDRIVE-
EW-DRIVE
HFB_X-RAY-PROT
EHT-INFO
DYN-FASE-COR
TILT
Y-SCAVEM
POR
POR-IO2
7S03-2 BC847BS
7S03-1 BC847BS
7S04 PDTC144ET
7S01 PDTC144ET
7S02 PDTC144ET
3S07 47K
3S20 10K
+5V2
RES
LED-GREEN
LED-RED
S-SCL
S-SDA
+5V_CON
+5V_VDP
+5V_AUD
+8V_AUD
+8V_VDP
+5V
+8V
+11V
MECHPART
0005
FRAMEDRIVE_IO2
STANDBY_IO2
IRQ-DIGITAL_IO2
KEYBOARD_IO2
+5V2_RELAY_IO2
B20
TO 1346
SA
AUX SUPPLY
1S46 B5B-PH-K
1S43 B5B-PH-K
TO 1936
O
SIDE I/O
1S36 B11B-PH-K
TO 0388
A
AUDIO
1S88 B8B-PH-K
1S20
TO 0302
LD
1-440054-0
5S06 100MHZ
5S07 100MHZ
IS00
8204 000 8294.6
A
B
C
D
E
F
G
H
I
1
2
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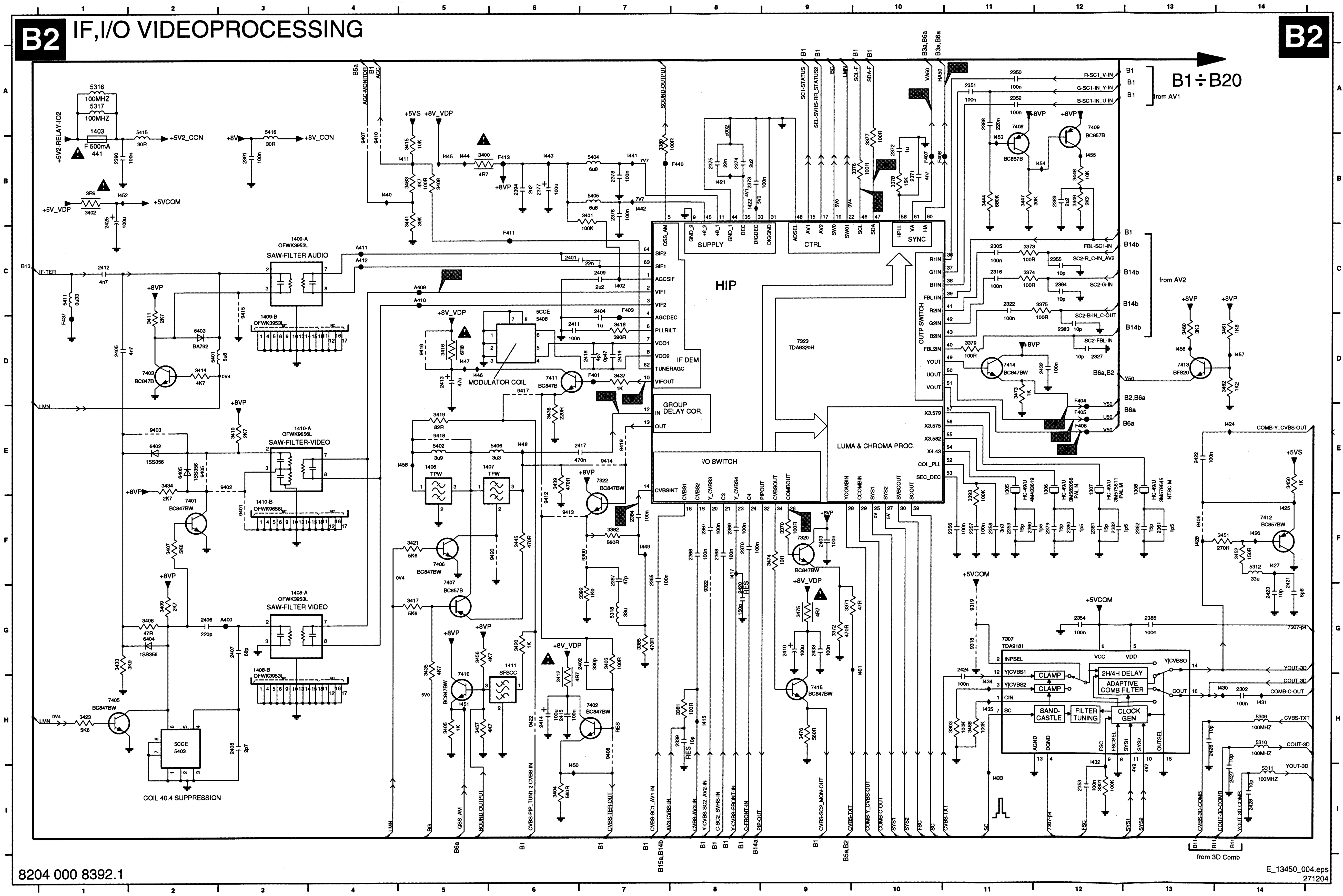
14
15

E_13450_003.eps
271204

SSB (AB): IF, I/O Videoprocessing

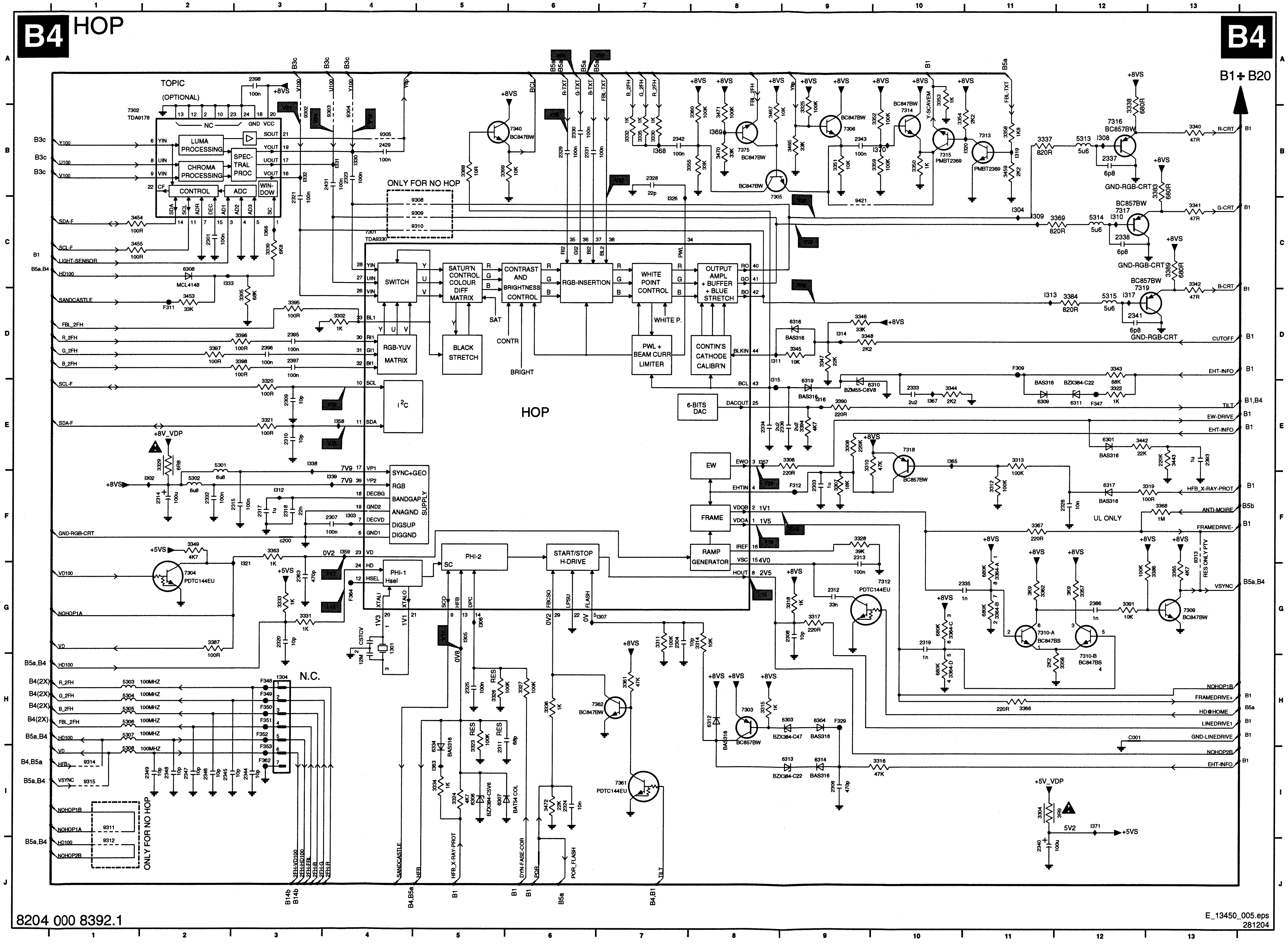

B2
IF,I/O VIDEOPROCESSING
B1÷B20
from AV1
from AV2
from 3D Comb
HIP
7323
TDA9320H
SUPPLY
CTRL
SYNC
IF DEM
GROUP DELAY COR.
I/O SWITCH
LUMA & CHROMA PROC.
OUTP SWITCH
SAW-FILTER AUDIO
SAW-FILTER-VIDEO
SAW-FILTER VIDEO
1409-A OFWK3953L
1410-A OFWK9656L
1408-A OFWK3953L
MODULATOR COIL
5CCE 5408
5CCE 5403
COIL 40.4 SUPPRESSION
SFSCC
TPW
7307
TDA9181
CLAMP
2H/4H DELAY
ADAPTIVE COMB FILTER
SAND-CASTLE
FILTER TUNING
CLOCK GEN
INPSEL
Y|CVBS1
Y|CVBS2
CIN
SC
VCC
VDD
Y|CVBSO
COUT
AGND
DGND
FSC
FSCSEL
SYS1
SYS2
OUTSEL
+5V2-RELAY-IO2
+5V2_CON
+8V_CON
+5VCOM
+5V_VDP
+8V_VDP
+5VS
+8VP
IF-TER
LMN
AGC-MONITOR
SOUND-OUTPUT
R-SC1_V-IN
G-SC1-IN_Y-IN
B-SC1-IN_U-IN
FBL-SC1-IN
SC2-R_C-IN_AV2
SC2-G-IN
SC2-B-IN_C-OUT
SC2-FBL-IN
COMB-Y_CVBS-OUT
YOUT-3D
COUT-3D
COMB-C-OUT
CVBS-TXT
QSS_AM
CVBS-PIP_TUN1-2-CVBS-IN
CVBS-TER-OUT
CVBS-SC1_AV1-IN
AV3-CVBS-IN
CVBS-AV3-IN
Y-CVBS-SC2_AV2-IN
C-SC2_SVHS-IN
Y-CVBS-FRONT-IN
C-FRONT-IN
PIP-OUT
CVBS-SC2_MON-OUT
COMB-Y_CVBS-OUT
COMB-C-OUT
SYS1
SYS2
FSC
SC
CVBS-3D-COMB
COUT-3D-COMB
YOUT-3D-COMB
7307-p4

8204 000 8392.1

E_13450_004.eps
271204

1305	E11
1306	E12
1307	E12
1308	E13
1403	A1
1406	E5
1407	E5
1408-A	G3
1408-B	G3
1409-A	C3
1409-B	D3
1410-A	E4
1410-B	F3
1411	G6
2302	H14
2305	C11
2316	C11
2322	C11
2327	D12
2339	H8
2350	A11
2351	A11
2352	A11
2353	I12
2354	G12
2355	C12
2356	F11
2357	F11
2358	F11
2359	F11
2360	F11
2361	F13
2362	F13
2364	C12
2365	F7
2366	F8
2367	F8
2368	F8
2369	F8
2370	F8
2371	B10
2372	B10
2373	B8
2374	B8
2375	B8
2376	B7
2377	B6
2378	B7
2379	F12
2380	F12
2381	F12
2382	F12
2383	D12
2384	F7
2385	G13
2387	F7
2388	A11
2389	B12
2390	B1
2391	B3
2394	B6
2399	F7
2401	C6
2402	G7
2403	F9
2404	C7
2405	D1
2406	G2
2407	G3
2408	H3
2409	C7
2410	G9
2411	D6
2412	C1
2413	D5
2414	H6
2415	H6
2417	E7
2418	D7
2419	D7
2420	G8
2421	F14
2422	E13
2423	G14
2424	G11
2425	B1
2426	H13
2427	I14
2428	I14
2432	D12
2433	G9
3301	I12
3303	H11
3370	F9
3371	G9
3372	G9
3373	C11
3374	C11
3375	C12
3376	B10
3377	B10
3378	B10
3379	D11
3380	B7
3381	H8
3382	F7
3385	G7
3392	G7
3393	F11
3400	B5
3401	B7
3402	B1
3403	G7
3404	I6
3405	H5
3406	G2
3407	F2
3408	B5
3409	G2
3410	E3
3411	D2
3412	H6
3414	D2
3415	B5
3416	D5
3417	G5
3418	D7
3419	E5
3420	G6
3421	F5
3423	H1
3433	G1
3434	E2
3435	G5
3436	E6
3437	D7
3439	E6
3441	B5
3444	B11
3445	F6
3447	B11
3448	B12
3449	B12
3450	E14
3451	F14
3452	F14
3456	G5
3457	H5
3460	D13
3461	D14
3462	D14
3463	B5
3468	H11
3473	D11
3474	F9
3475	G9
3476	H9
5309	H14
5310	H14
5311	I14
5312	F14
5316	A1
5317	A1
5318	G7
5401	D2
5402	E5
5403	H2
5404	B7
5405	B7
5406	E6
5408	D6
5411	C1
5415	A2
5416	A3
6402	E2
6403	D2
6404	G2
6405	E2
7307	G11
7320	F9
7322	E7
7323	D9
7401	F2
7402	H7
7403	D2
7405	H1
7406	F5
7407	G5
7408	A11
7409	A12
7410	H5
7411	D6
7412	F14
7413	D13
7414	D11
7415	H9
9300	F6
9318	G11
9319	G11
9322	G8
9401	F3
9402	E3
9403	E2
9405	E2
9406	F13
9407	B4
9408	H7
9410	B4
9412	F6
9413	F6
9414	E7
9415	C3
9416	D5
9417	D6
9418	E5
9419	E7
9420	F6
9422	H6
A400	G3
A409	C5
A410	C5
A411	C4
A412	C4
F401	D7
F403	C7
F404	D12
F405	E12
F406	E12
F407	B10
F408	B10
F411	C6
F413	B6
F437	D1
F440	B8
I401	G10
I402	C7
I411	B5
I415	H8
I417	F8
I421	B8
I422	B8
I424	E14
I425	F14
I426	F14
I427	F14
I428	F13
I430	H14
I431	H14
I432	I12
I433	I11
I434	H11
I435	H11
I440	B4
I441	B7
I442	B7
I443	B6
I444	B5
I445	B5
I446	D5
I447	D5
I448	E6
I449	F7
I450	I6
I451	H5
I452	B1
I453	B11
I454	B12
I455	B12
I456	D13
I457	D14
I458	E5
c002	A8

SSB (AB): HOP


B4
HOP
B4
B1÷B20
TOPIC
(OPTIONAL)
7302
TDA9178
LUMA PROCESSING
CHROMA PROCESSING
SPEC-TRAL PROC
CONTROL
ADC
WIN-DOW
NC
GND VCC
YIN
UIN
VIN
CF
SOUT
YOUT
UOUT
VOUT
SDA
SCL
ADR
DEC
AD1
AD2
AD3
SC
Y100
U100
V100
SDA-F
SCL-F
LIGHT-SENSOR
HD100
SANDCASTLE
FBL_2FH
R_2FH
G_2FH
B_2FH
GND-RGB-CRT
VD100
NOHOP1A
VD
HD100
B3c
B1
B5a,B4
ONLY FOR NO HOP
9308
9309
9310
7301
TDA9330
SWITCH
SATUR'N CONTROL COLOUR DIFF MATRIX
CONTRAST AND BRIGHTNESS CONTROL
RGB-INSERTION
WHITE POINT CONTROL
OUTPUT AMPL + BUFFER + BLUE STRETCH
RGB-YUV MATRIX
BLACK STRETCH
PWL + BEAM CURR LIMITER
CONTIN'S CATHODE CALIBR'N
6-BITS DAC
I²C
HOP
SYNC+GEO
RGB
BANDGAP
ANAGND
DIGSUP
DIGGND
SUPPLY
EW
FRAME
RAMP GENERATOR
PHI-1 Hsel
PHI-2
START/STOP H-DRIVE
SAT
CONTR
BRIGHT
WHITE P.
R-CRT
G-CRT
B-CRT
CUTOFF
EHT-INFO
TILT
EW-DRIVE
HFB_X-RAY-PROT
ANTI-MOIRE
FRAMEDRIVE-
FRAMEDRIVE+
VSYNC
NOHOP1B
HD@HOME
LINEDRIVE1
GND-LINEDRIVE
NOHOP2B
UL ONLY
GND-RGB-CRT
+8VS
+8V_VDP
+5VS
+5V_VDP
N.C.
ONLY FOR NO HOP
SANDCASTLE
HFB
HFB_X-RAY-PROT
DYN-FASE-COR
POR
POR_FLASH
TILT
B14b
B4,B5a
B1
B5a
B4,B1
8204 000 8392.1
E_13450_005.eps
281204

1301	G4
1304	H3
2301	C2
2303	F9
2304	G7
2306	I9
2307	F4
2308	G9
2309	E3
2310	E3
2311	I5
2312	G9
2313	F9
2314	F2
2315	F3
2317	F3
2318	F3
2319	G10
2320	G3
2321	C3
2323	B4
2324	I6
2325	H5
2326	F12
2328	B7
2329	B6
2330	B6
2331	B6
2332	F2
2333	E10
2334	E8
2335	G11
2336	E9
2337	B12
2338	C12
2340	J11
2341	D12
2342	B7
2343	B9
2344	I3
2345	I2
2346	I2
2347	I2
2348	I2
2349	I2
2363	G3
2386	G12
2393	E13
2395	D3
2396	D3
2397	D3
2398	A3
2429	B4
2431	B4
3302	D4
3304	I11
3305	D3
3306	E9
3307	F9
3308	E9
3310	E9
3311	G7
3312	F11
3313	E11
3314	G8
3315	H8
3316	I10
3317	G9
3318	G9
3319	F13
3320	E3
3321	E3
3322	E12
3323	I5
3324	I5
3325	B9
3326	H5
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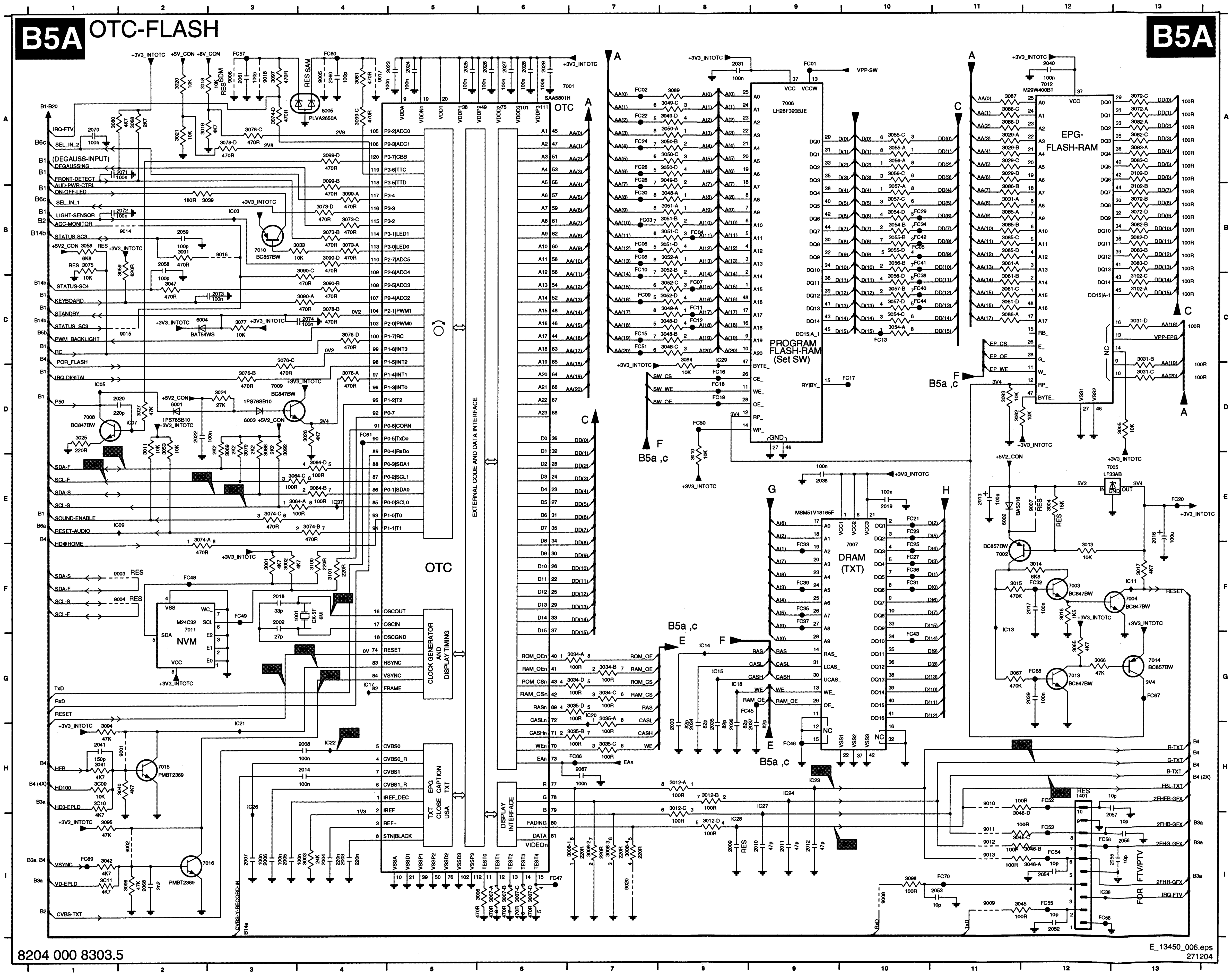
3329	E2
3330	B7
3331	G3
3332	B7
3333	G3
3334	I5
3335	B7
3336	H6
3337	B11
3338	B12
3339	C3
3340	B13
3341	C13
3342	C13
3343	D12
3344	E10
3345	D9
3346	D9
3347	D9
3348	D9
3349	F2
3350	B10
3351	B9
3352	B10
3353	A10
3354	B10
3355	B7
3356	H12
3357	G12
3358	B11
3359	B10
3360	B8
3361	H7
3362	G11
3363	F3
3364-A	G11
3364-B	G11
3364-C	G10
3364-D	H10
3365	G13
3366	H11
3367	F11
3368	F13
3369	C12
3383	B13
3384	D12
3386	G13
3387	G2
3388	B5
3389	C13
3390	E9
3391	G12
3394	E9
3395	D3
3396	D3
3397	D2
3398	D3
3399	B5
3442	E12
3443	E13
3453	D2
3454	C1
3455	C1
3459	B11
3465	B9
3467	B8
3470	B8
3471	B8
3472	I6
5301	E2
5302	F2
5303	H1
5304	H1
5305	H1
5306	H1
5307	H1
5308	I1
5313	B12
5314	C12
5315	D12
6301	E12
6303	H9
6304	H9
6306	I5
6307	I5
6308	C2
6309	E11
6310	E10
6311	E12
6312	H8
6313	I9
6314	I9
6316	D9
6317	F12
6319	E9
6334	I5
7301	C4
7302	B1
7303	H8
7304	G2
7305	C9
7306	B9
7309	G13
7310-A	G11
7310-B	H12
7312	G10
7313	B11
7314	B10
7315	B10
7316	B12
7317	C12
7318	E10
7319	C12
7340	B6
7361	I7
7362	H7
7375	B8
9302	B3
9303	B4
9304	B4
9305	B4
9308	C5
9309	C5
9310	C5
9311	I1
9312	J1
9313	F13
9314	I1
9315	I1
9421	C9
C001	H12
F309	D11
F311	D2
F312	F9
F329	H9
F347	E12
F348	H3
F349	H3
F350	H3
F351	H3
F352	H3
F353	I3
F362	I3
F364	G4
I302	F2
I303	F4
I304	B12
I305	G5
I306	G5
I307	G7
I308	B12
I309	C12
I310	C12
I311	D8
I312	F3
I313	D12
I314	D9
I315	D8
I316	E9
I317	D12
I319	B11
I320	B11
I321	G3
I326	C7
I330	B4
I331	B4
I332	B3
I333	C2
I338	E3
I339	F4
I357	E8
I358	E4
I359	F4
I363	I5
I365	E10
I366	C3
I367	E10
I368	B7
I369	B8
I370	B10
I371	I12
c200	F3

SSB (AB): OTC Flash



1001 F4
1401 H12
2002 F3
2003 I4
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2005 I3
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2009 I8
2010 I9
2011 I9
2012 I9
2013 E11
2014 H4
2016 E13
2017 F12
2018 F3
2019 E10
2020 D2
2022 D2
2023 A5
2024 A5
2025 A5
2026 A6
2027 A6
2028 A6
2029 A6
2031 A8
2033 H8
2034 H8
2035 H8
2036 H8
2037 H9
2038 E9
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2040 A12
2041 H1
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2053 I11
2054 I12
2055 I13
2056 I13
2057 I13
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2059 B2
2060 A4
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2067 H7
2068 I2
2070 A1
2071 A2
2072 B2
2073 C3
2074 C4
3001 F3
3002 F3
3003 I4
3004 E12
3005 D13
3006 I6
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3007-B I6
3007-C I6
3007-D I6
3008-1 I7
3008-2 I7
3008-3 I7
3008-4 I7
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3011 D2
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3012-B H8
3012-C H8
3012-D I8
3013 F12
3014 F12
3015 F11
3016 F12
3017 F13
3018 A2
3019 A2
3020 A2
3021 A2
3024 D3
3025 D1
3026 D4
3027 D2
3029-A A11
3029-B A11
3029-C A11
3029-D A11
3031-A B11
3031-B C13
3031-C D13
3031-D C13
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3034-B G7
3034-C G7
3034-D G7
3035-A G7
3035-B H7
3035-C H7
3035-D G7
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3040 H2
3041 H1
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3045 I12
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3046-B I12
3046-C I12
3046-D I12
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3048-D C8
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3050-D A8
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3051-B B8
3051-C B8
3051-D B8
3052-A B8
3052-B B8
3052-C C8
3052-D C8
3053 D2
3054-A C10
3054-B B10
3054-C C10
3054-D B10
3055-A A10
3055-B B10
3055-C A10
3055-D B10
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3056-B B10
3056-C A10
3056-D C10
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3057-B C10
3057-C B10
3057-D C10
3058 B1
3059 B2
3061-A B11
3061-B C11
3061-C C11
3061-D C11
3062 D11
3064-A E3
3064-B E4
3064-C E3
3064-D E4
3065 G12
3066 G12
3067 G11
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3069 D3
3072-A A13
3072-B B13
3072-C A13
3072-D B13
3073-A B4
3073-B B4
3073-C B4
3073-D B4
3074-A E2
3074-B E4
3074-C E3
3074-D A3
3075 B1
3076-A D4
3076-B D3
3076-C C3
3076-D C4
3077 C3
3078-B C4
3078-C A3
3078-D A3
3079 D3
3080 A1
3081 A4
3082-A A13
3082-B B13
3082-C A13
3082-D B13
3083-A A13
3083-B B13
3083-C A13
3083-D B13
3084 C8
3085-A B11
3085-B B11
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3086-A C11
3086-B B11
3086-C A11
3086-D A11
3087 A11
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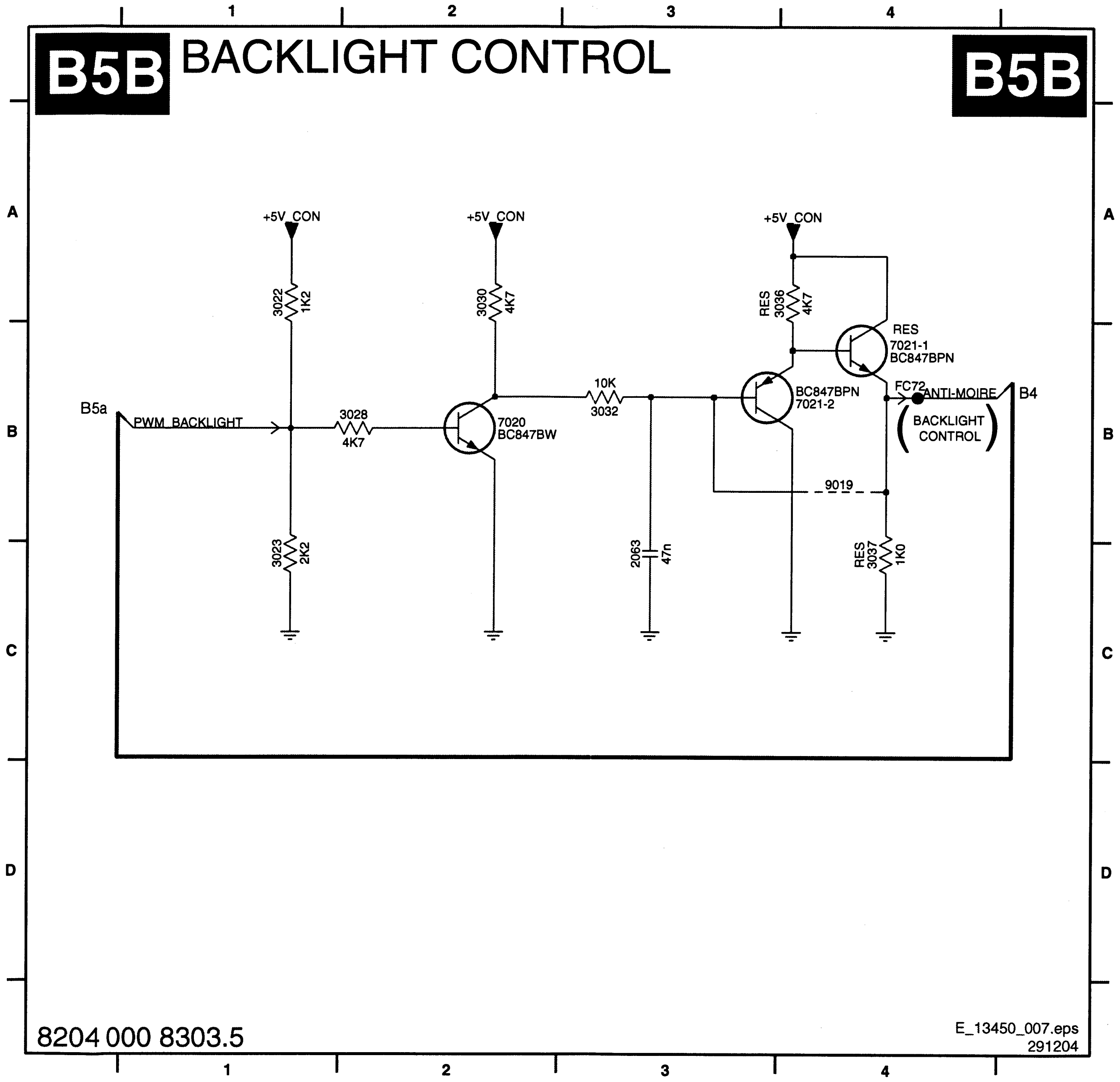
3089 A8
3090-A C4
3090-B C4
3090-C B4
3090-D B4
3091 B2
3092 D3
3093 D11
3094 H1
3095 I1
3096 I2
3097 A3
3098 I10
3099-A B4
3099-B A4
3099-C A4
3099-D A4
3100 F4
3101 F4
3102-A C13
3102-B B13
3102-C C13
3102-D A13
3C09 H1
3C10 H1
3C11 I1
6001 D2
6002 E11
6003 D3
6004 C2
6005 A4
7001 A6
7002 F11
7003 F12
7004 F13
7005 E13
7006 A9
7007 F10
7008 D1
7009 D3
7010 B3
7011 F2
7012 A12
7013 G12
7014 G13
7015 H2
7016 I2
9001 H2
9002 I2
9003 F2
9004 F2
9005 A4
9006 A3
9007 E12
9008 I10
9009 I11
9010 H11
9011 I11
9012 I11
9013 I11
9014 B2
9015 C2
9016 B3
9017 A4
9018 A3
9020 I7
FC01 A9
FC02 A7
FC03 B7
FC04 B8
FC05 B10
FC06 B7
FC07 C8
FC08 B7
FC09 C7
FC10 B7
FC11 C8
FC12 C8
FC13 C10
FC15 C7
FC16 D8
FC17 D10
FC18 D8
FC19 D8
FC20 E13
FC21 E10
FC22 A7
FC23 E10
FC24 A7
FC25 F10
FC26 A7
FC27 F10
FC28 A7
FC29 B10
FC30 B7
FC31 F10
FC32 F12
FC33 F9
FC34 B10
FC35 F9
FC36 F10
FC37 F9
FC38 C10
FC39 F9
FC40 C10
FC41 B10
FC42 B10
FC43 G10
FC44 C10
FC45 G8
FC46 H9
FC47 I6
FC48 F2
FC49 F3
FC50 D8
FC51 C7
FC52 H12
FC53 I12
FC54 I12
FC55 I12
FC56 I12
FC57 A3
FC58 I12
FC60 A4
FC61 D4
FC66 H7
FC67 G13
FC68 G12
FC69 I1
FC70 I11
IC03 B3
IC05 D1
IC07 D2
IC09 E2
IC11 F13
IC13 F11
IC14 G8
IC15 G8
IC17 G4
IC18 G8
IC20 G7
IC21 H3
IC22 H4
IC23 H9
IC24 H9
IC26 H3
IC27 H9
IC28 I8
IC29 C8
IC37 E4
IC38 I12

SSB (AB): Backlight Control

2063 C3	3023 C1	3030 A2	3036 A4	7020 B2	7021-2 B4	FC72 B4
3022 A1	3028 B2	3032 B3	3037 C4	7021-1 B4	9019 B4	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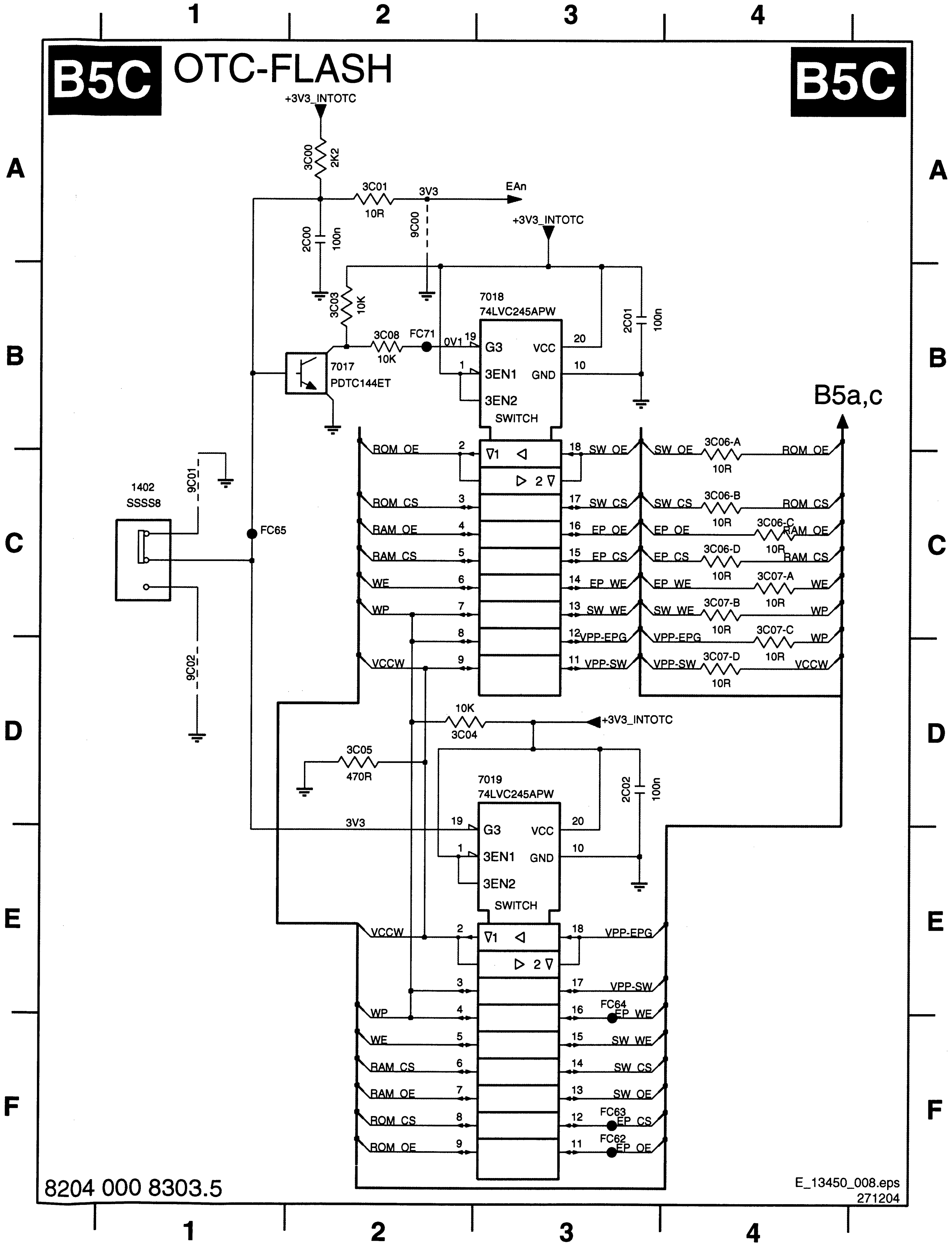
BACKLIGHT CONTROL
B5B
1
2
3
4
A
B
C
D
+5V_CON
+5V_CON
+5V_CON
3022
1K2
3030
4K7
RES
3036
4K7
RES
7021-1
BC847BPN
B5a
PWM_BACKLIGHT
3028
4K7
7020
BC847BW
10K
3032
BC847BPN
7021-2
FC72
ANTI-MOIRE
B4
BACKLIGHT
CONTROL
9019
3023
2K2
2063
47n
RES
3037
1K0
8204 000 8303.5
E_13450_007.eps
291204

SSB (AB): OTC-Flash

1402 C1	2C02 D3	3C03 B2	3C06-A B4	3C06-D C4	3C07-C C4	7017 B2	9C00 A2	FC62 F3	FC65 C1
2C00 A2	3C00 A2	3C04 D2	3C06-B C4	3C07-A C4	3C07-D D4	7018 B3	9C01 C1	FC63 F3	FC71 B2
2C01 B3	3C01 A2	3C05 D2	3C06-C C4	3C07-B C4	3C08 B2	7019 D3	9C02 D1	FC64 E3	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OTC-FLASH
B5C
1
2
3
4
A
B
C
D
E
F
+3V3_INTOTC
3C00
2K2
3C01
10R
3V3
EAn
9C00
2C00
100n
+3V3_INTOTC
3C03
10K
7018
74LVC245APW
2C01
100n
3C08
10K
FC71
0V1
19
G3
VCC
20
1
3EN1
GND
10
3EN2
SWITCH
7017
PDTC144ET
B5a,c
ROM_OE
ROM_CS
RAM_OE
RAM_CS
WE
WP
VCCW
SW_OE
SW_CS
EP_OE
EP_CS
EP_WE
SW_WE
VPP-EPG
VPP-SW
3C06-A
3C06-B
3C06-C
3C06-D
3C07-A
3C07-B
3C07-C
3C07-D
10R
1402
SSSS8
9C01
FC65
9C02
10K
3C04
+3V3_INTOTC
3C05
470R
7019
74LVC245APW
2C02
100n
3V3
FC64
FC63
FC62
8204 000 8303.5
E_13450_008.eps
271204

SSB (AB): DC/DC Convertor

1U01 A2
1U02 A13
2U01 A8
2U02 B9
2U03 B5
2U04 C6
2U05 D2
2U06 D3
2U07 D4
2U08 D8
2U09 D6
2U10 A3
2U11 E9
2U12 E6
2U13 E13
2U14 B6
2U15 A2
2U16 D3
2U17 D5
2U18 C2
2U19 H2
2U20 G4
2U21 C4
2U22 H6
2U23 D12
2U24 G8
2U25 G5
2U26 F6
2U27 D2
2U28 E2
2U30 C2
2U31 D11
2U32 D2
2U33 F7
2U34 G11
2U35 G7
3U01 C13
3U02 B2
3U03 C1
3U04 D3
3U05 C4
3U06 D10
3U07 D9
3U08 D10
3U09 D4
3U10 D13
3U11 D4
3U12 G10
3U13 D6
3U14 D2
3U15 D13
3U16 D10
3U17 E7
3U18 E10
3U19 E7
3U20 E13
3U21 E3
3U22 E10
3U23 F13
3U24 G6
3U25 F3
3U26 G5
3U27 H10
3U28 E1
3U29 C3
3U30 C3
3U31 C3
3U32 H1
3U33 H3
3U34 G5
3U35 H6
3U36 H9
3U37 F9
3U38 F8
3U39 G9
3U40 G8
3U41 H7
3U42 G6
3U43 G6
3U44 D2
3U45 E2
3U46 C9
3U51 B5
3U52 F9
3U53 F9
3U54 H7
3U55 E8
5U01 C8
5U02 A2
5U03 C7
5U04 C7
5U05 C11
5U06 D11
6U01 A3
6U02 B8
6U03 B5
6U04 B5
6U05 C2
6U06 D8
6U07 D13
6U08 E4
6U09 E4
6U10 H2
6U11 H3
6U12 F7
6U13 E9
6U14 G7
6U15 H8
7U01 B3
7U02 C5
7U03 C7
7U04 C6
7U05 D9
7U06-A D10
7U06-B E11
7U07 F8
7U08 E5
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9U05 A14
9U06 B14
9U07 B14
9U08 B11
FU01 B13
FU02 B13
FU03 B9
FU04 C9
FU05 C7
FU06 G6
FU07 H1
FU08 C9
FU09 D12
IU01 B2
IU02 D1
IU03 D2
IU04 E4
IU05 E4
IU06 E5
IU07 D4
IU08 C4
IU09 B5
IU10 B4
IU11 B6
IU13 E7
IU14 E7
IU15 B8
IU16 C10
IU17 D9
IU18 D11
IU19 C13
IU20 E10
IU21 E13
IU22 E11
IU23 A13
IU24 B13
IU25 G5
IU26 F3
IU27 G4
IU28 H3
IU30 C3
IU31 D2
IU32 E2
IU34 H6
IU35 G7
IU36 G8
IU37 F8
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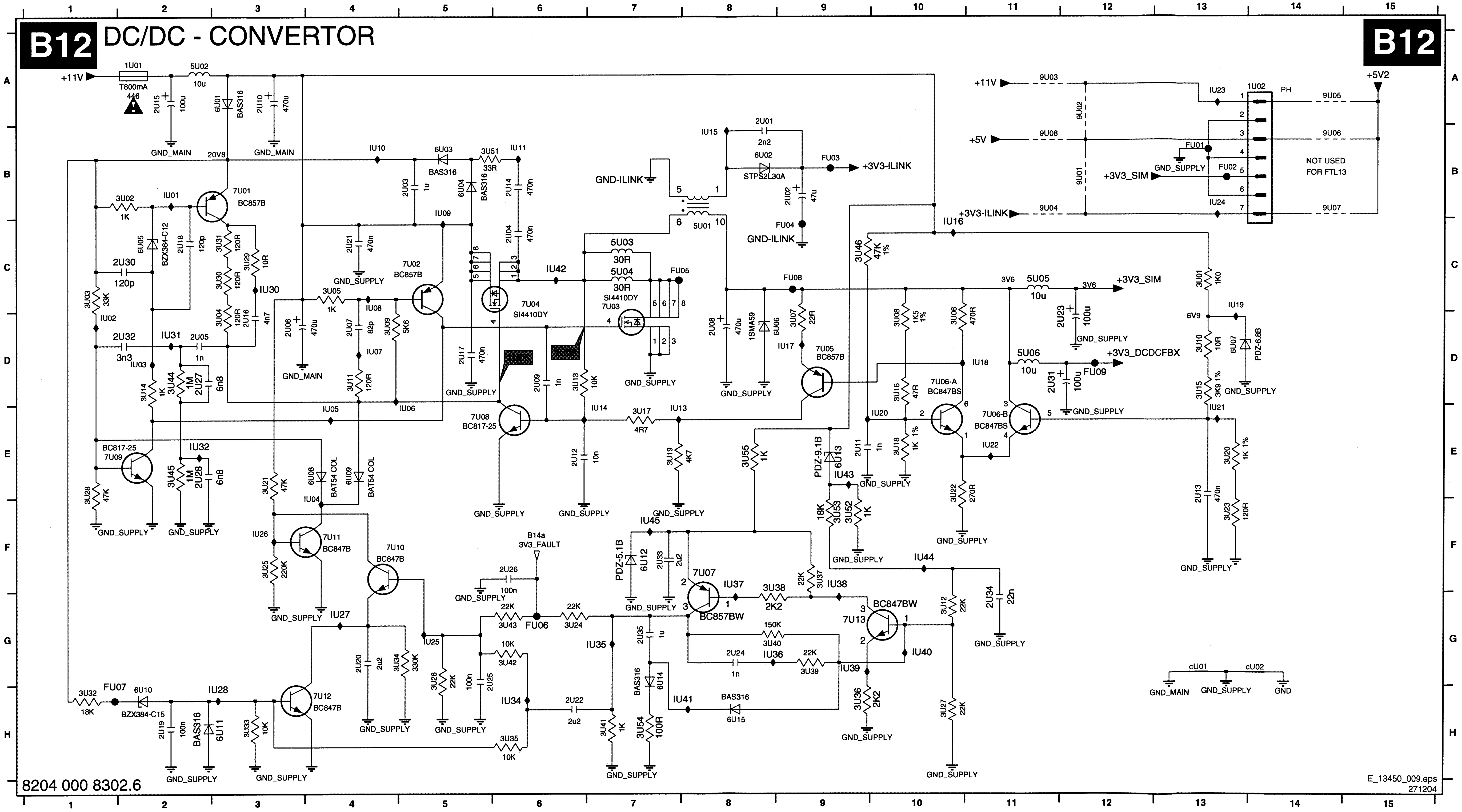
IU41 H8
IU42 C6
IU43 E9
IU44 F10
IU45 F7
cU01 G13
cU02 G14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DC/DC - CONVERTOR
B12
+11V
1U01
T800mA
5U02
10u
2U15
100u
6U01
BAS316
2U10
470u
GND_MAIN
20V8
7U01
BC857B
3U02
1K
IU01
6U05
BZX384-C12
2U18
120p
3U31
120R
3U29
10R
IU30
2U30
120p
3U03
33K
IU02
2U32
3n3
IU31
2U05
1n
IU03
3U14
1K
3U44
1M
2U27
6n8
3U30
120R
3U04
120R
2U16
4n7
IU32
3U45
1M
2U28
6n8
BC817-25
7U09
3U28
47K
GND_SUPPLY
IU10
6U03
BAS316
3U51
33R
IU11
2U03
1u
6U04
BAS316
2U14
470n
IU09
2U21
470n
7U02
BC857B
3U05
1K
IU08
2U06
470u
2U07
82p
3U09
5K6
IU07
3U11
120R
IU05
IU06
2U04
470n
IU42
7U04
SI4410DY
2U17
470n
1U06
1U05
7U08
BC817-25
2U09
1n
3U13
10K
IU14
3U17
4R7
IU13
2U12
10n
3U19
4K7
5U03
30R
5U04
30R
SI4410DY
7U03
FU05
GND-ILINK
5U01
IU15
2U01
2n2
6U02
STPS2L30A
FU03
+3V3-ILINK
2U02
47u
FU04
FU08
2U08
470u
1SMA59
6U06
3U07
22R
IU17
7U05
BC857B
3U46
47K
1%
IU16
3V6
5U05
10u
+3V3_SIM
2U23
100u
3U08
1K5
1%
3U06
470R
IU18
5U06
10u
+3V3_DCDCFBX
2U31
100u
FU09
3U16
47R
7U06-A
BC847BS
7U06-B
BC847BS
IU20
2U11
1n
3U18
1K 1%
IU22
3U22
270R
3U55
1K
PDZ-9.1B
6U13
IU43
18K
3U53
3U52
1K
3U01
1K0
IU19
6V9
3U10
10R
6U07
PDZ-6.8B
3U15
3K9 1%
IU21
3U20
1K 1%
2U13
470n
3U23
120R
+11V
9U03
9U02
IU23
1U02
PH
9U05
+5V2
+5V
9U08
9U06
FU01
FU02
+3V3_SIM
9U01
NOT USED
FOR FTL13
IU24
+3V3-ILINK
9U04
9U07
3U21
47K
6U08
BAT54 COL
6U09
BAT54 COL
IU04
IU26
7U11
BC847B
3U25
220K
7U10
BC847B
IU27
B14a
3V3_FAULT
2U26
100n
22K
3U43
FU06
22K
3U24
IU35
IU45
PDZ-5.1B
6U12
2U33
2u2
7U07
IU37
3U38
2K2
22K
3U37
IU38
BC857BW
BC847BW
7U13
150K
3U40
2U24
1n
IU36
22K
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IU39
IU40
IU44
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22K
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22n
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BAS316
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IU41
BAS316
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22K
2U25
100n
10K
3U42
IU34
2U22
2u2
3U41
1K
3U54
100R
3U35
10K
3U32
18K
FU07
6U10
BZX384-C15
IU28
2U19
100n
BAS316
6U11
3U33
10K
7U12
BC847B
cU01
cU02
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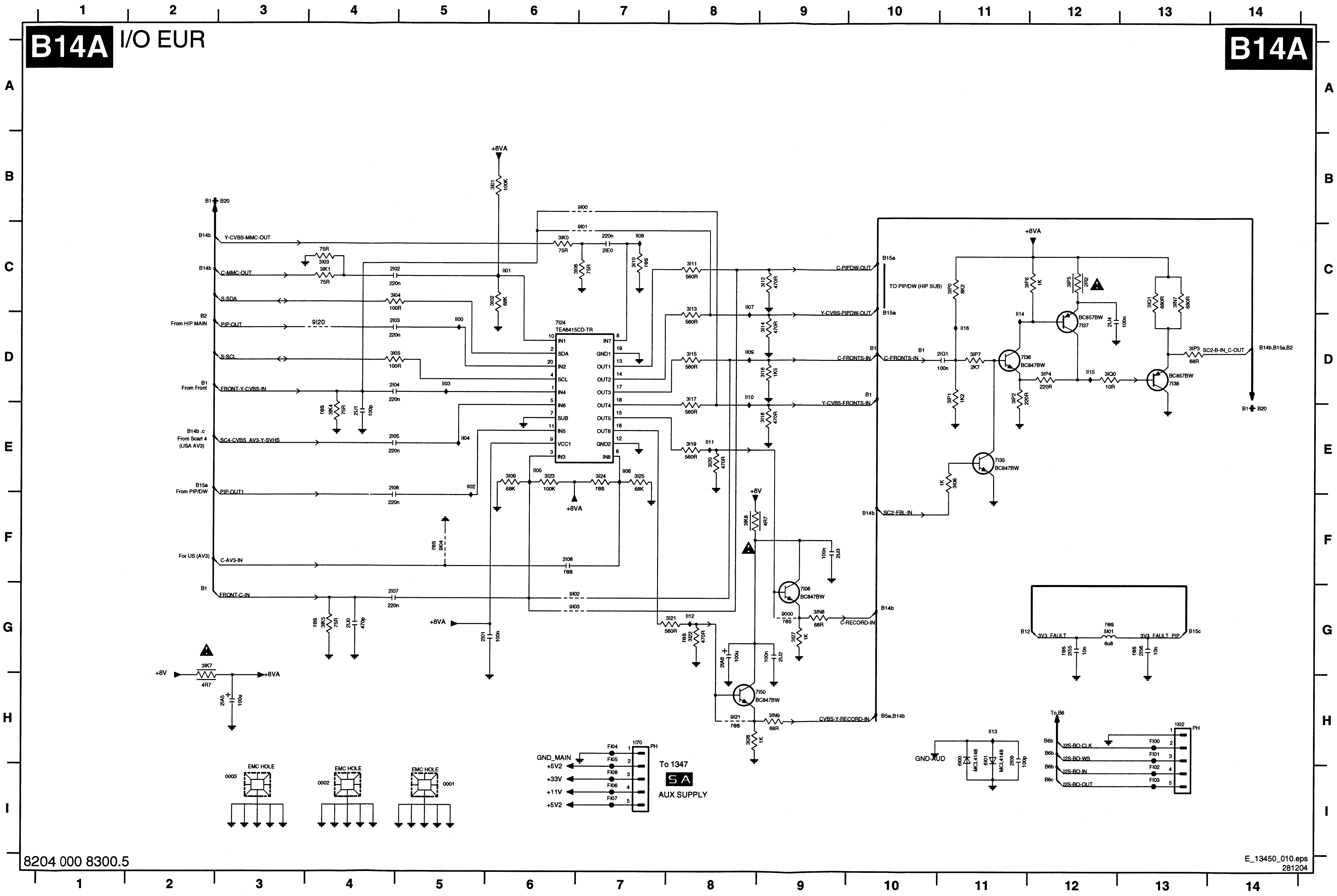
271204

SSB (AB): I/O Eur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6
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8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
+8VA
3I01 100K
B1 B20
B14b Y-CVBS-MMC-OUT
B14b C-MMC-OUT
S-SDA
B2 From HIP MAIN PIP-OUT
9I20
S-SCL
B1 From Front FRONT-Y-CVBS-IN
B14b,c From Scart 4 (USA AV3) SC4-CVBS_AV3-Y-SVHS
B15a From PIP/DW PIP-OUT1
For US (AV3) C-AV3-IN
B1 FRONT-C-IN
7124 TEA6415CD-TR
IN1 SDA IN2 SCL IN4 IN6 SUB IN5 VCC1 IN3
IN7 GND1 OUT1 OUT2 OUT3 OUT4 OUT5 OUT6 GND2 IN8
9I00
9I01
9I02
9I03
9I04 res
C-PIPDW-OUT
Y-CVBS-PIPDW-OUT
C-FRONTS-IN
Y-CVBS-FRONTS-IN
B15a
TO PIP/DW (HIP SUB)
7136 BC847BW
7137 BC857BW
7138 BC857BW
7135 BC847BW
SC2-B-IN_C-OUT
B14b,B15a,B2
B14b SC2-FBL-IN
7106 BC847BW
7150 BC847BW
C-RECORD-IN
CVBS-Y-RECORD-IN
B5a,B14b
+8V
3IK7 4R7
+8VA
B12 3V3_FAULT
5I01 6u8
3V3_FAULT_PIP B15c
GND_MAIN
+5V2
+33V
+11V
+5V2
1I70
To 1347
SA
AUX SUPPLY
GND-AUD
6I00 MCL4148
6I01 MCL4148
To B6
B6b I2S-BO-CLK
B6b I2S-BO-WS
B6b I2S-BO-IN
B6c I2S-BO-OUT
1I02
EMC HOLE
0003
0002
0001
8204 000 8300.5
E_13450_010.eps
281204

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0002	I4
0003	I3
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1I70	H7
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2I02	C4
2I03	D4
2I04	D4
2I05	E4
2I06	E4
2I07	G4
2I08	F6
2I09	H11
2I55	G12
2I56	G13
2IA5	H3
2IA6	G8
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2IG1	D11
2IJ0	G4
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2IJ2	G9
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2IJ4	D12
3I01	B6
3I02	C6
3I03	C4
3I04	C4
3I05	D4
3I06	C6
3I08	E11
3I09	E6
3I10	C7
3I11	C8
3I12	C9
3I13	C8
3I14	D9
3I15	D8
3I16	D9
3I17	D8
3I18	E9
3I19	E8
3I20	E8
3I21	G8
3I22	G8
3I23	E6
3I24	E7
3I25	E7
3I26	H8
3I27	G9
3IK0	C6
3IK1	C4
3IK4	E4
3IK5	G4
3IK7	G2
3IK8	F8
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3IN8	G9
3IN9	H9
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3IP3	D13
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3IP6	C11
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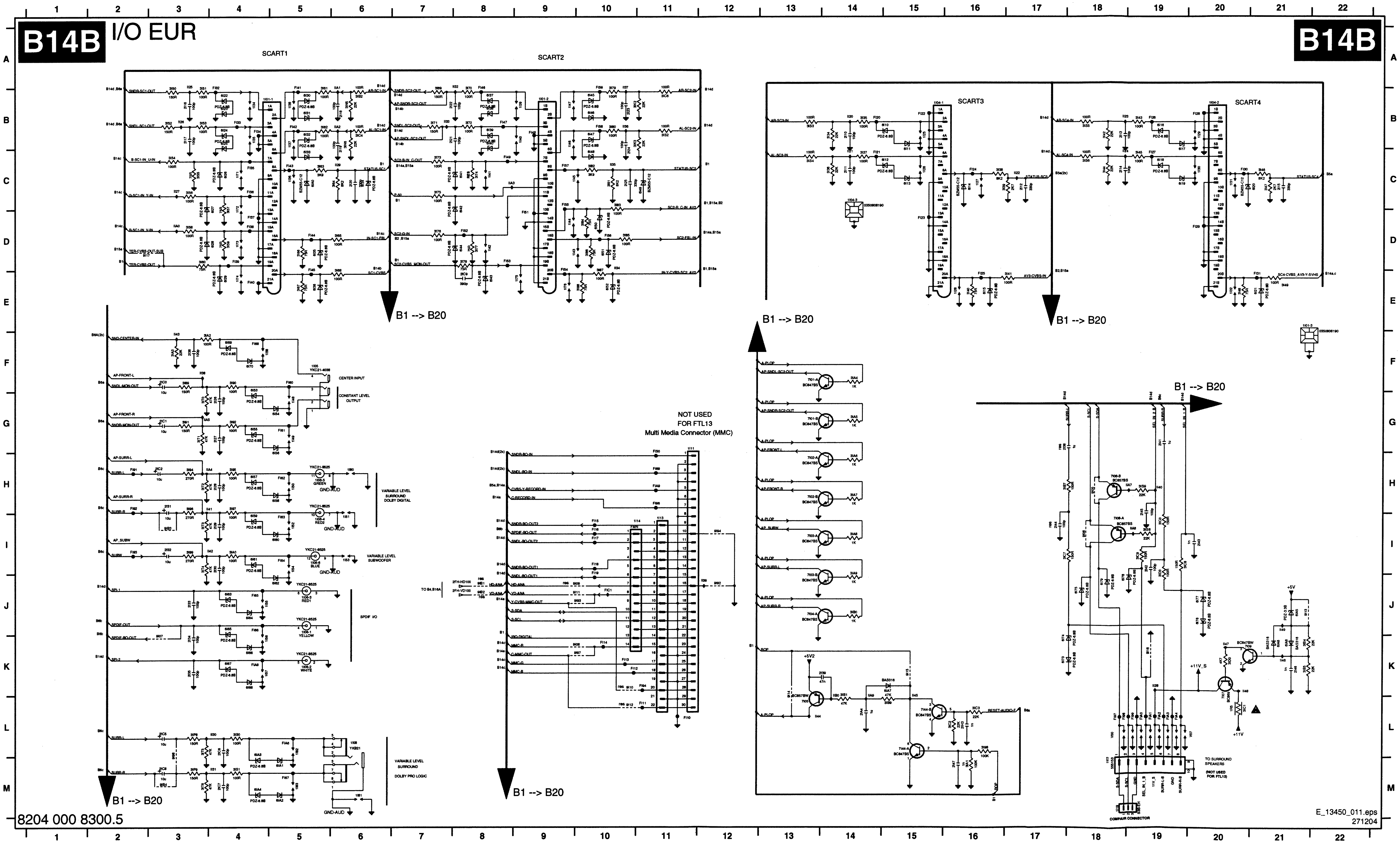
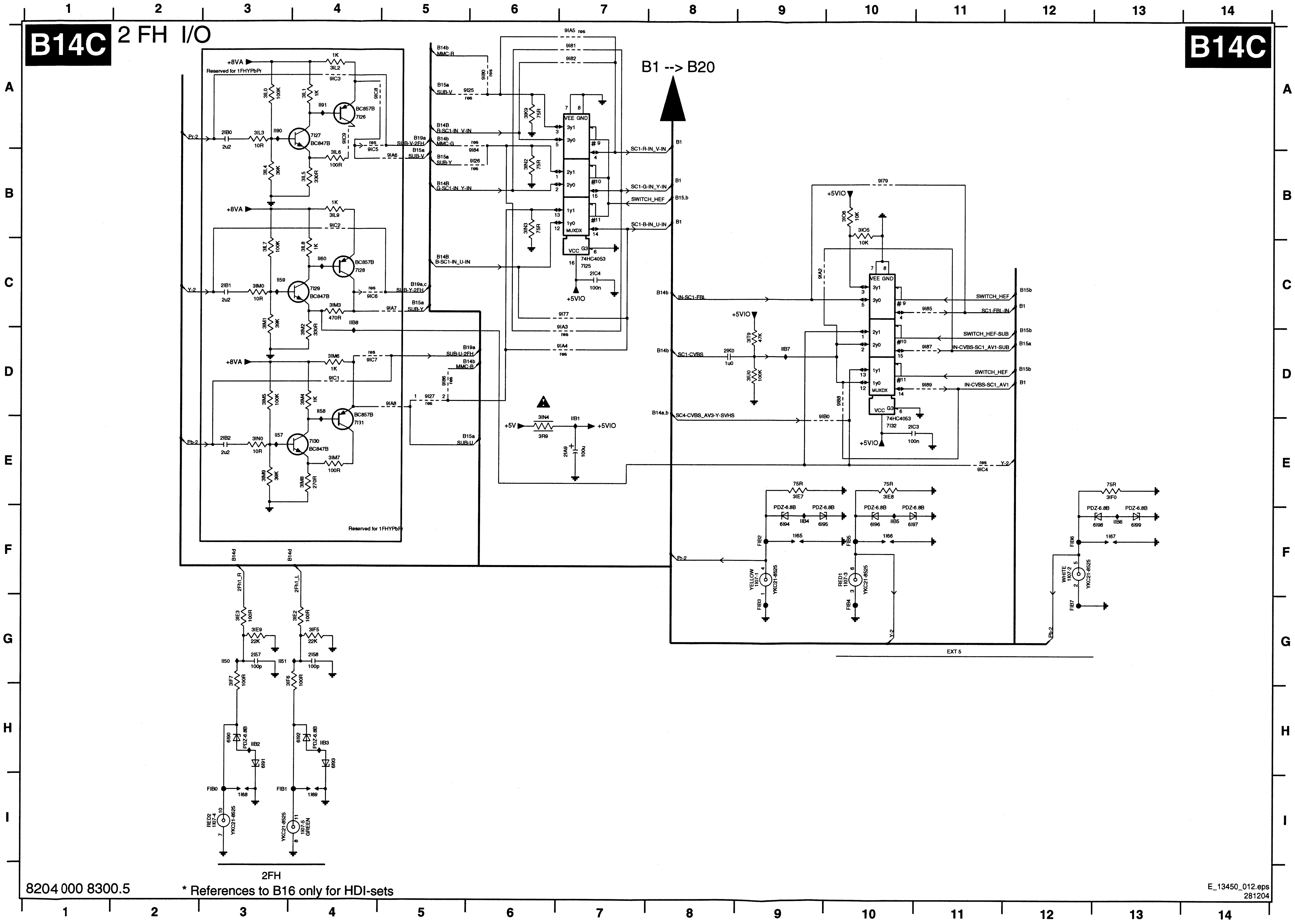
3IQ1	C13
5I01	G12
6I00	H11
6I01	H11
7I06	G9
7I24	D6
7I35	E11
7I36	D11
7I37	D12
7I38	D13
7I50	H8
9I00	B7
9I01	C7
9I02	G6
9I03	G6
9I04	F5
9I20	D4
9I20	G9
9I21	H8
FI00	H13
FI01	H13
FI02	I13
FI03	I13
FI04	H7
FI05	H7
FI06	I7
FI07	I7
FI08	I7
II00	D5
II01	C6
II02	E5
II03	D5
II04	E5
II05	E6
II06	E7
II07	C8
II08	C7
II09	D8
II10	D8
II11	E8
II12	G8
II13	H11
II14	D11
II15	D12
II16	D11

SSB (AB): I/O Eur

V00	L18
V07	L20
1101-1	B4
1101-2	B9
1101-3	E21
1103	L18
1104-1	B15
1104-2	B20
1104-3	C14
1105	F5
1106-1	J5
1106-2	K5
1106-3	J5
1106-4	I5
1106-5	H5
1106-6	I5
1108	L6
1111	G11
1113	I11
1114	I10
1119	M18
1125	B15
1126	C15
1127	C16
1128	E16
1129	B20
1130	C20
1131	C20
1132	E20
1134	B4
1135	B4
1136	C5
1137	B5
1138	B5
1139	B9
1140	B9
1141	C8
1142	D8
1143	D9
1144	D9
1145	C9
1146	B9
1147	B9
1148	G5
1149	G5
1150	H5
1151	I6
1152	I5
1153	I6
1154	I5
1155	J4
1156	K4
1157	K4
1158	F4
1171	C4
1172	C4
1173	D4
1174	E4
1175	E9
1176	E9
1180	H6
1181	M6
1182	L5
1183	M5
2110	B14
2111	C14
2112	C17
2113	B18
2114	C18
2115	C21
2116	B3
2117	B3
2118	B6
2119	B6
2120	C6
2121	B7
2122	B7
2123	B10
2124	C10
2125	C10
2126	G4
2127	G4
2128	H4
2129	I4
2130	I4
2131	H3
2132	I3
2133	J3
2134	K3
2135	K3
2136	F3
2138	G17
2139	K14
2141	G19
2142	I19
2143	I20
2144	I17
2145	H19
2146	K21
2147	M16
21A4	L14
21C0	F3
21C1	G3
21C2	H3
21C5	L3
21C6	L4
21C7	M4
21C8	M3
21C9	E8
21H3	L16
3134	B14
3135	B14
3136	C14
3137	C14
3138	C16
3139	C16
3140	E16
3141	E17
3142	B18
3143	B19
3144	C18
3145	C19
3146	C21
3147	C21
3148	E20
3149	E21
3150	B3
3151	B3
3152	B3
3153	B3
3154	C3
3155	C3
3156	C3
3157	C4
3158	D3
3159	D4
3160	D3
3161	B5
3162	B5
3163	C5
3164	C6
3165	D6
3166	D5
3167	E5
3168	E6
3169	B7
3170	B8
3171	B7
3172	B8
3173	C7
3174	C8
3175	C7
3176	D7
3177	D8
3178	D8
3179	B10
3180	B10
3181	C10
3182	C10
3183	C10
3184	D10
3185	D10
3186	D10
3187	E10
3188	E10
3189	F3
3190	F4
3191	G3
3192	G4
3194	H3
3195	H4
3196	H3
3197	H4
3198	L16
3199	I3
31A0	I4
31A1	M16
31A2	F3
31A3	F3
31A4	F14
31A5	G14
31A6	H14
31A7	H14
31A8	I14
31A9	J14
31B0	J14
31B1	L14
31B2	B6
31B4	K21
31B5	K21
31B7	H17
31B9	L15
31C0	I19
31C1	L20
31C2	L16
31C3	L16
31C4	B6
31C6	B11
31C7	I17
31C8	I19
31C9	I19
31D0	K20
31D3	I19
31K2	B10
31K3	B10
31N5	B6
31N6	B6
31P8	L3
31P9	M3
31S0	L4
31S1	M4
31S2	B11
31S3	B13
31S4	C13
31S5	B18
31S6	C18
31S8	I19
31S9	H19
31T0	G3
31T1	G3
31T2	H3
31T3	I3
31T4	I3
31T5	L3
31T6	M3
6110	B15
6111	C15
6112	C15
6113	C15
6114	C16
6115	E16
6116	B19
6117	C19
6118	C19
6119	C19
6120	C21
6121	E21
6122	B4
6123	B4
6124	B4
6125	B4
6126	C4
6127	C4
6128	D4
6129	E4
6130	B5
6131	B5
6132	B5
6133	C5
6134	C6
6135	D5
6136	E5
6137	B8
6138	B8
6139	B8
6140	B8
6141	C8
6142	C8
6143	E8
6144	D8
6145	B10
6146	B10
6147	B10
6148	C10
6149	C11
6150	D10
6151	D10
6152	E10
6153	F4
6154	G5
6155	G4
6156	H5
6157	H4
6158	H5
6159	I4
6160	I5
6161	I4
6162	J5
6163	J4
6164	J4
6165	J4
6166	K4
6167	K4
6168	K4
6169	F4
6170	F4
6173	K17
6174	K17
6175	J18
6176	J20
6177	J20
6178	J18
6179	J18
61A0	C5
61A1	M5
61A2	M5
61A3	L4
61A4	M4
61A5	J21
61A6	K21
61A7	K15
61A8	K21
7101-A	F13
7101-B	G13
7102-A	H13
7102-B	H13
7103-A	I13
7103-B	J13
7104-A	J13
7105	L13
7107	K20
7108-A	I18
7108-B	H18
7109	K21
7144-A	L15
7144-B	L15
9105	H18
9106	I18
9107	K3
9108	K10
9109	J10
9110	K10
9111	J10
9112	L10
9113	J21
9114	K13
9115	K15
9116	K19
9117	D2
9192	J12
9193	J10
9194	I12
9197	K10
9198	L3
91B1	J8
91B2	J8
91B3	I3
91B4	M3
F110	L11
F111	L11
F112	K10
F113	K10
F114	K10
F115	I10
F116	I10
F117	I10
F118	I10
F119	J10
F120	B14
F121	C14
F122	B15
F123	D15
F124	C16
F125	E16
F126	B19
F127	C19
F128	B20
F129	D20
F130	C20
F131	E21
F132	B4
F133	B4
F134	B4
F135	C4
F136	C4
F137	D4
F138	D4
F139	D4
F140	E4
F141	B5
F142	B5
F143	C5
F144	D5
F145	E5
F146	B8
F147	B8
F148	B9
F149	C8
F150	H11
F151	D9
F152	D8
F153	D8
F154	E9
F155	C9
F156	D10
F157	C9
F158	B10
F159	B10
F160	F5
F161	G5
F162	H5
F163	I5
F164	I5
F165	J4
F166	J4
F167	M5
F168	F4
F169	H11
F191	H2
F192	H2
F193	I2
F194	K11
F196	H11
F197	L18
F198	L18
F199	L19
F1A0	L19
F1A1	L19
F1A2	L19
F1A3	L19
F1A4	L19
F1A6	L5
F1A8	K4
F1A9	H11
F1C1	J10
I120	B14
I121	C14
I122	C17
I123	B18
I124	C18
I125	A3
I126	B3
I127	C3
I128	K19
I129	C6
I130	L4
I131	M4
I132	A8
I133	B7
I134	D10
I135	C10
I136	B10
I137	B10
I138	F3
I139	J12
I140	H19
I141	H4
I142	I4
I143	F3
I144	L13
I145	L15
I146	K21
I147	K20
I148	K20
I149	J21
I1A0	D3
I1A1	B6
I1A2	B6
I1A3	C8
I1A4	H4
I1A5	G3
I1A7	H19
I1A8	I19
I1A9	L14
I1B0	L14

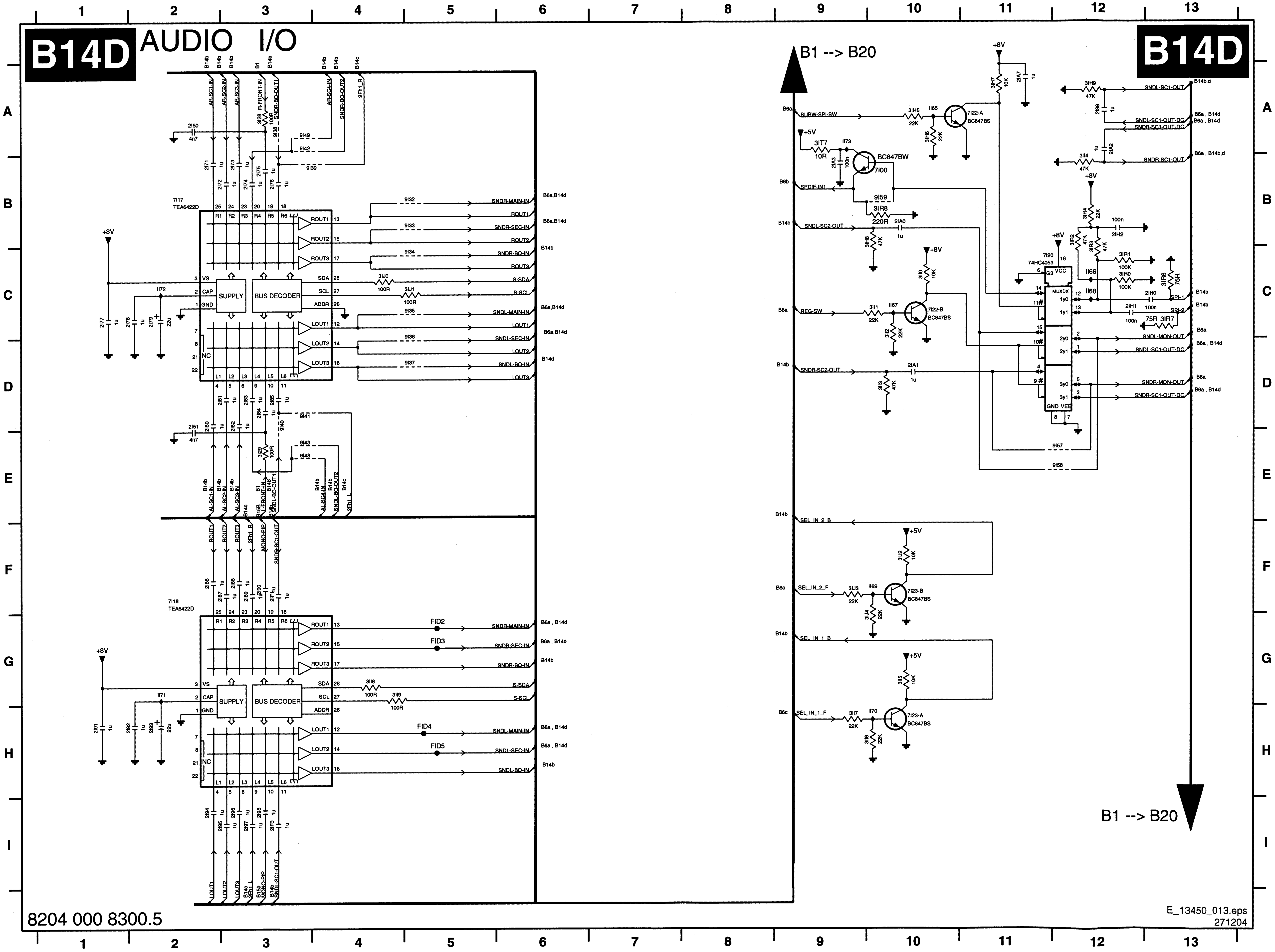

B14B
I/O EUR
SCART1
SCART2
SCART3
SCART4
B1 --> B20
CENTER INPUT
CONSTANT LEVEL OUTPUT
VARIABLE LEVEL SURROUND DOLBY DIGITAL
VARIABLE LEVEL SUBWOOFER
SPDIF I/O
VARIABLE LEVEL SURROUND DOLBY PRO LOGIC
NOT USED FOR FTL13 Multi Media Connector (MMC)
TO SURROUND SPEAKERS (NOT USED FOR FTL13)
COMPAIR CONNECTOR
GND-AUD
+5V
+11V
+11V_S
+5V2
RESET-AUDIO-E
STATUS-SC1
STATUS-SC2
STATUS-SC4
AV3-CVBS-IN
YKC21-3825
GREEN
RED
BLUE
RED1
YELLOW
WHITE
BC847BS
BC857BW
BAS316
PDZ-6.8B
8204 000 8300.5
E_13450_011.eps
271204

SSB (AB): 2FH I/O


B14C
2 FH I/O
B14C
B1 --> B20
+8VA
Reserved for 1FHYPbPr
Reserved for 1FHYPbPr
BC857B
BC847B
7126
7127
7128
7129
7130
7131
Pr-2
Y-2
Pb-2
SUB-V-2FH
SUB-Y-2FH
SUB-U-2FH
MMC-R
MMC-G
MMC-B
SUB-V
SUB-Y
SUB-U
R-SC1-IN_V-IN
G-SC1-IN_Y-IN
B-SC1-IN_U-IN
74HC4053
7125
7132
MUXDX
VEE GND
VCC
+5VIO
+5V
3IN4
3R9
IIB1
SC1-R-IN_V-IN
SC1-G-IN_Y-IN
SWITCH_HEF
SC1-B-IN_U-IN
IN-SC1-FBL
SC1-CVBS
SC4-CVBS_AV3-Y-SVHS
SWITCH_HEF-SUB
IN-CVBS-SC1_AV1-SUB
IN-CVBS-SC1_AV1
SC1-FBL-IN
PDZ-6.8B
75R
YELLOW
RED1
WHITE
RED2
GREEN
YKC21-8525
EXT 5
2FH
2FH1_R
2FH1_L
8204 000 8300.5
* References to B16 only for HDI-sets
E_13450_012.eps
281204

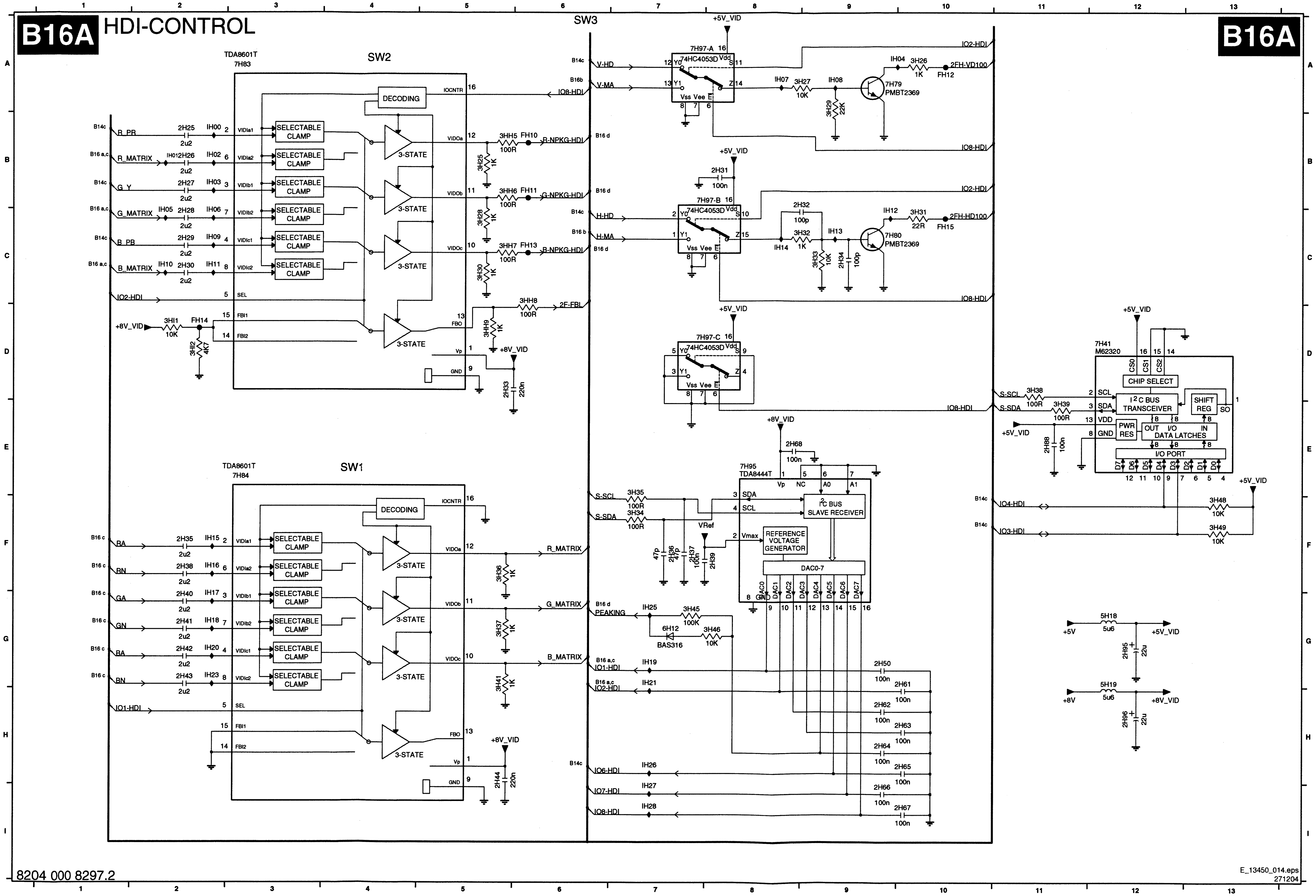
1I07-1	F9
1I07-2	F12
1I07-3	F10
1I07-4	I3
1I07-5	I4
1I65	F9
1I66	F10
1I67	F13
1I68	I3
1I69	I4
2I57	G3
2I58	G4
2IA9	E7
2IB0	A3
2IB1	C3
2IB2	E3
2IC3	E10
2IC4	C7
2IK0	D8
3IE2	G4
3IE3	G3
3IE7	E9
3IE8	E10
3IE9	G3
3IF0	E13
3IF5	G4
3IF6	G4
3IF7	G3
3IK9	A6
3IL0	A3
3IL1	A4
3IL2	A4
3IL3	A3
3IL4	B3
3IL5	B4
3IL6	B4
3IL7	C3
3IL8	C4
3IL9	B4
3IM0	C3
3IM1	C3
3IM2	D4
3IM3	C4
3IM4	D4
3IM5	D3
3IM6	D4
3IM7	E4
3IM8	E4
3IM9	E3
3IN0	E3
3IN2	B6
3IN3	B6
3IN4	E6
3IO5	B10
3IO6	B10
3IT9	D9
3IU0	D9
6I90	H3
6I91	H3
6I92	H4
6I93	H4
6I94	F9
6I95	F9
6I96	F10
6I97	F10
6I98	F13
6I99	F13
7I25	C7
7I26	A4
7I27	A4
7I28	C4
7I29	C4
7I30	E4
7I31	E4
7I32	E10
9I25	A5
9I26	B6
9I27	D5
9I77	C7
9I79	B10
9I80	A6
9I81	A7
9I82	A7
9I84	A6
9I85	C11
9I86	D5
9I87	D11
9I88	D10
9I89	D11
9IA2	C9
9IA3	D7
9IA4	D7
9IA5	A7
9IA6	B5
9IA7	C5
9IA8	D5
9IB0	E9
9IC1	D4
9IC2	B4
9IC3	A4
9IC4	E11
9IC5	B4
9IC6	C4
9IC7	D4
9IC8	A4
9IC9	A4
FIB0	I3
FIB1	I3
FIB2	F9
FIB3	G9
FIB4	G10
FIB5	F10
FIB6	F12
FIB7	G12
II50	G3
II51	G3
II57	E3
II58	D4
II59	C3
II60	C4
II90	A3
II91	A4
IIB1	E7
IIB2	H3
IIB3	H4
IIB4	F9
IIB5	F10
IIB6	F13
IIB7	D9
IIB8	C4

SSB (AB): Audio I/O


B14D
AUDIO I/O
B1 --> B20
7I17
TEA6422D
7I18
TEA6422D
SUPPLY
BUS DECODER
VS
CAP
GND
SDA
SCL
ADDR
NC
ROUT1
ROUT2
ROUT3
LOUT1
LOUT2
LOUT3
R1 R2 R3 R4 R5 R6
L1 L2 L3 L4 L5 L6
+8V
+5V
AB-SC1-IN
AB-SC2-IN
AB-SC3-IN
R-FRONT-IN
SNDR-BO-OUT1
AB-SC4-IN
SNDR-BO-OUT2
2Fh1_R
AL-SC1-IN
AL-SC2-IN
AL-SC3-IN
L-FRONT-IN
SNDL-BO-OUT1
AL-SC4-IN
SNDL-BO-OUT2
2Fh1_L
MONO-PIP
SNDR-SC1-OUT
SNDL-SC1-OUT
SNDR-MAIN-IN
SNDR-SEC-IN
SNDR-BO-IN
SNDL-MAIN-IN
SNDL-SEC-IN
SNDL-BO-IN
S-SDA
S-SCL
B6a,B14d
B14b
B14c
B1
FID2
FID3
FID4
FID5
SUBW-SPI-SW
SPDIF-IN1
SNDL-SC2-OUT
SNDR-SC2-OUT
REG-SW
SEL_IN_2_B
SEL_IN_2_F
SEL_IN_1_B
SEL_IN_1_F
BC847BW
7I00
7I22-A
7I22-B
7I23-A
7I23-B
BC847BS
7I20
74HC4053
MUXDX
VCC
GND VEE
1y0
1y1
2y0
2y1
3y0
3y1
SNDL-SC1-OUT
SNDL-SC1-OUT-DC
SNDR-SC1-OUT-DC
SNDR-SC1-OUT
SNDL-MON-OUT
SNDR-MON-OUT
SPI-1
SPI-2
B6a , B14d
B14b,d
9I57
9I58
9I59
8204 000 8300.5
E_13450_013.eps
271204

2I50	A2
2I51	D2
2I71	B2
2I72	B3
2I73	B3
2I74	B3
2I75	B3
2I76	B3
2I77	C1
2I78	C2
2I79	C2
2I80	D2
2I81	D3
2I82	D3
2I83	D3
2I84	D3
2I85	D3
2I86	F2
2I87	F3
2I88	F3
2I89	F3
2I90	F3
2I91	H1
2I92	H2
2I93	H2
2I94	I2
2I95	I3
2I96	I3
2I97	I3
2I98	I3
2I99	A12
2IA0	B10
2IA1	D10
2IA2	A12
2IA3	B9
2IA7	A11
2IF0	I3
2IF1	F3
2IH0	C13
2IH1	C12
2IH2	B12
3I28	A3
3I29	E3
3IH5	A10
3IH6	A10
3IH7	A11
3IH8	B10
3IH9	A12
3II0	C10
3II1	C10
3II2	C10
3II3	D10
3II4	B12
3II5	G10
3II6	H10
3II7	H9
3II8	G4
3II9	G4
3IJ0	C4
3IJ1	C5
3IJ2	F10
3IJ3	F9
3IJ4	G10
3IR0	C12
3IR1	C12
3IR2	B12
3IR3	C12
3IR4	B12
3IR6	C13
3IR7	C13
3IR8	B10
3IT7	A9
7I00	B10
7I17	B2
7I18	F2
7I20	C12
7I22-A	A11
7I22-B	C10
7I23-A	H10
7I23-B	F10
9I32	B5
9I33	B5
9I34	C5
9I35	C5
9I36	C5
9I37	D5
9I38	A3
9I39	B3
9I40	D3
9I41	D3
9I42	A3
9I43	E3
9I48	E3
9I49	A3
9I57	E12
9I58	E12
9I59	B10
FID2	G5
FID3	G5
FID4	H5
FID5	H5
II65	A10
II66	C12
II67	C10
II68	C12
II69	F10
II70	H10
II71	G2
II72	C2
II73	A9

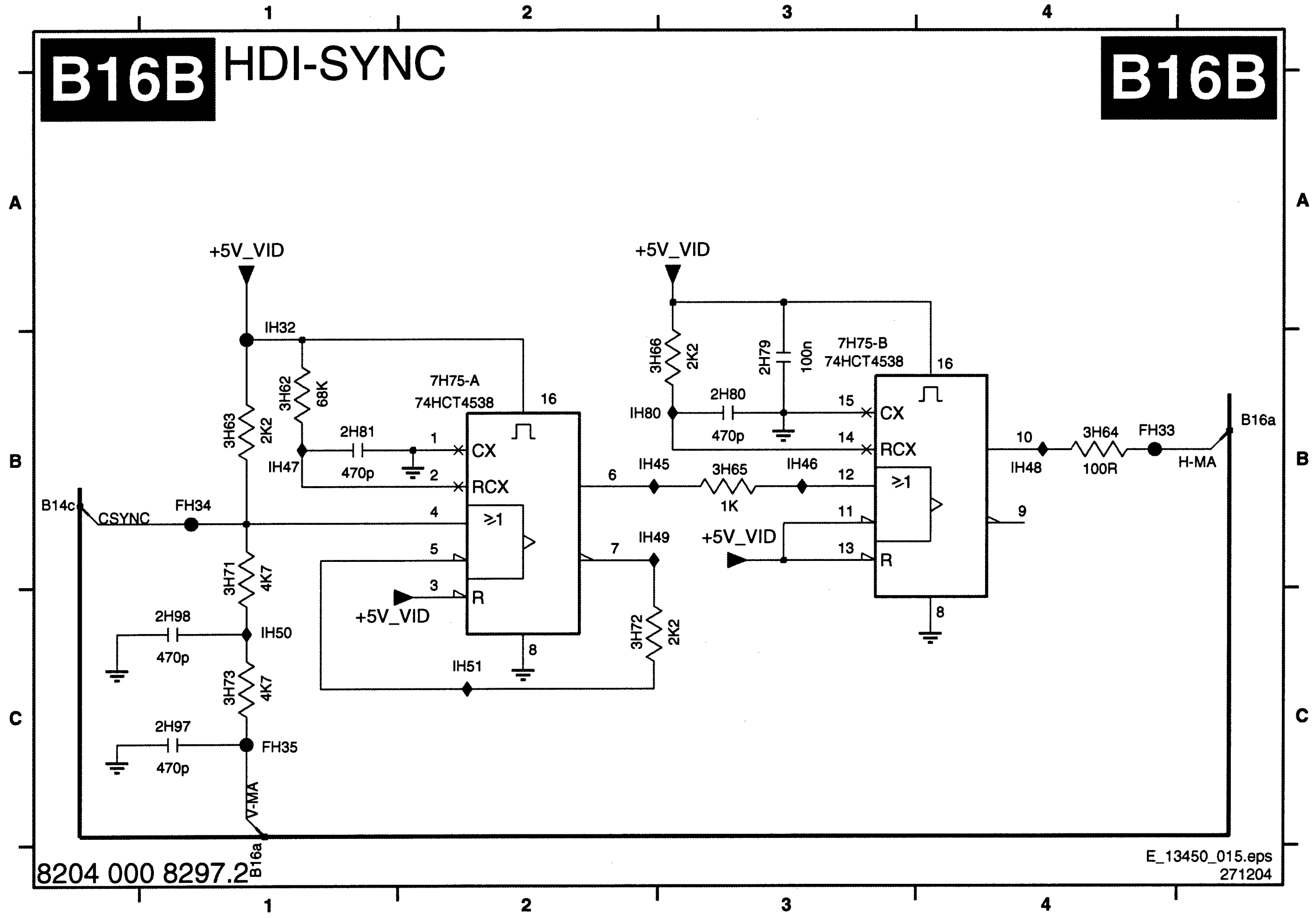
SSB (AB): HDI Control


B16A
HDI-CONTROL
SW3
SW2
SW1
TDA8601T
7H83
7H84
DECODING
SELECTABLE CLAMP
3-STATE
B_PR
R_MATRIX
G_Y
G_MATRIX
B_PB
B_MATRIX
IO2-HDI
+8V_VID
RA
RN
GA
GN
BA
BN
IO1-HDI
R-NPKG-HDI
G-NPKG-HDI
B-NPKG-HDI
2F-FBL
IO8-HDI
R_MATRIX
G_MATRIX
B_MATRIX
+5V_VID
7H97-A
7H97-B
7H97-C
74HC4053D
V-HD
V-MA
H-HD
H-MA
7H79
7H80
PMBT2369
2FH-VD100
2FH-HD100
7H41
M62320
CHIP SELECT
I2C BUS TRANSCEIVER
SHIFT REG
PWR RES
OUT I/O IN DATA LATCHES
I/O PORT
S-SCL
S-SDA
IO4-HDI
IO3-HDI
7H95
TDA8444T
I2C BUS SLAVE RECEIVER
REFERENCE VOLTAGE GENERATOR
DAC0-7
VRef
PEAKING
BAS316
IO1-HDI
IO2-HDI
IO6-HDI
IO7-HDI
IO8-HDI
5H18
5H19
+5V
+8V
8204 000 8297.2
E_13450_014.eps
271204

2H25	B2
2H26	B2
2H27	B2
2H28	C2
2H29	C2
2H30	C2
2H31	B8
2H32	B8
2H33	D5
2H34	C9
2H35	F2
2H36	F7
2H37	F7
2H38	F2
2H39	F8
2H40	G2
2H41	G2
2H42	G2
2H43	G2
2H44	H5
2H50	G9
2H61	G10
2H62	H9
2H63	H10
2H64	H9
2H65	H10
2H66	I9
2H67	I10
2H68	E8
2H88	E11
2H95	G12
2H96	H12
3H25	B5
3H26	A10
3H27	A9
3H28	C5
3H29	A9
3H30	C5
3H31	C10
3H32	C9
3H33	C9
3H34	F7
3H35	E7
3H36	F5
3H37	G5
3H38	D11
3H39	E11
3H41	G5
3H45	G7
3H46	G8
3H48	F13
3H49	F13
3HH5	B5
3HH6	B5
3HH7	C5
3HH8	C6
3HH9	D5
3HI1	D2
3HI2	D2
5H18	G12
5H19	G12
6H12	G7
7H41	D12
7H79	A9
7H80	C9
7H83	A3
7H84	E3
7H95	E8
7H97-A	A7
7H97-B	B8
7H97-C	D8
FH10	B6
FH11	B6
FH12	A10
FH13	C6
FH14	D2
FH15	C10
IH00	B2
IH01	B2
IH02	B2
IH03	B2
IH04	A9
IH05	C2
IH06	C2
IH07	A8
IH08	A9
IH09	C2
IH10	C2
IH11	C2
IH12	C9
IH13	C9
IH14	C8
IH15	F2
IH16	F2
IH17	G2
IH18	G2
IH19	G7
IH20	G2
IH21	G7
IH23	G2
IH25	G7
IH26	H7
IH27	I7
IH28	I7

SSB (AB): HDI Sync

2H79 B3	2H97 C1	3H63 B1	3H66 B3	3H73 C1	FH33 B4	IH32 B1	IH47 B1	IH50 C1
2H80 B3	2H98 C1	3H64 B4	3H71 B1	7H75-A B2	FH34 B1	IH45 B2	IH48 B4	IH51 C2
2H81 B1	3H62 B1	3H65 B3	3H72 C2	7H75-B B3	FH35 C1	IH46 B3	IH49 B2	IH80 B2


1
2
3
4
A
B
C
B16B
HDI-SYNC
B16B
+5V_VID
IH32
3H62
68K
3H63
2K2
IH47
2H81
470p
7H75-A
74HCT4538
16
1
CX
2
RCX
4
≥1
5
3
R
+5V_VID
8
IH51
B14c
CSYNC
FH34
3H71
4K7
2H98
470p
IH50
3H73
4K7
2H97
470p
FH35
V-MA
B16a
6
IH45
3H65
1K
IH46
7
IH49
3H72
2K2
+5V_VID
3H66
2K2
2H79
100n
IH80
2H80
470p
7H75-B
74HCT4538
16
15
CX
14
RCX
12
≥1
11
13
R
8
10
IH48
3H64
100R
FH33
H-MA
B16a
9
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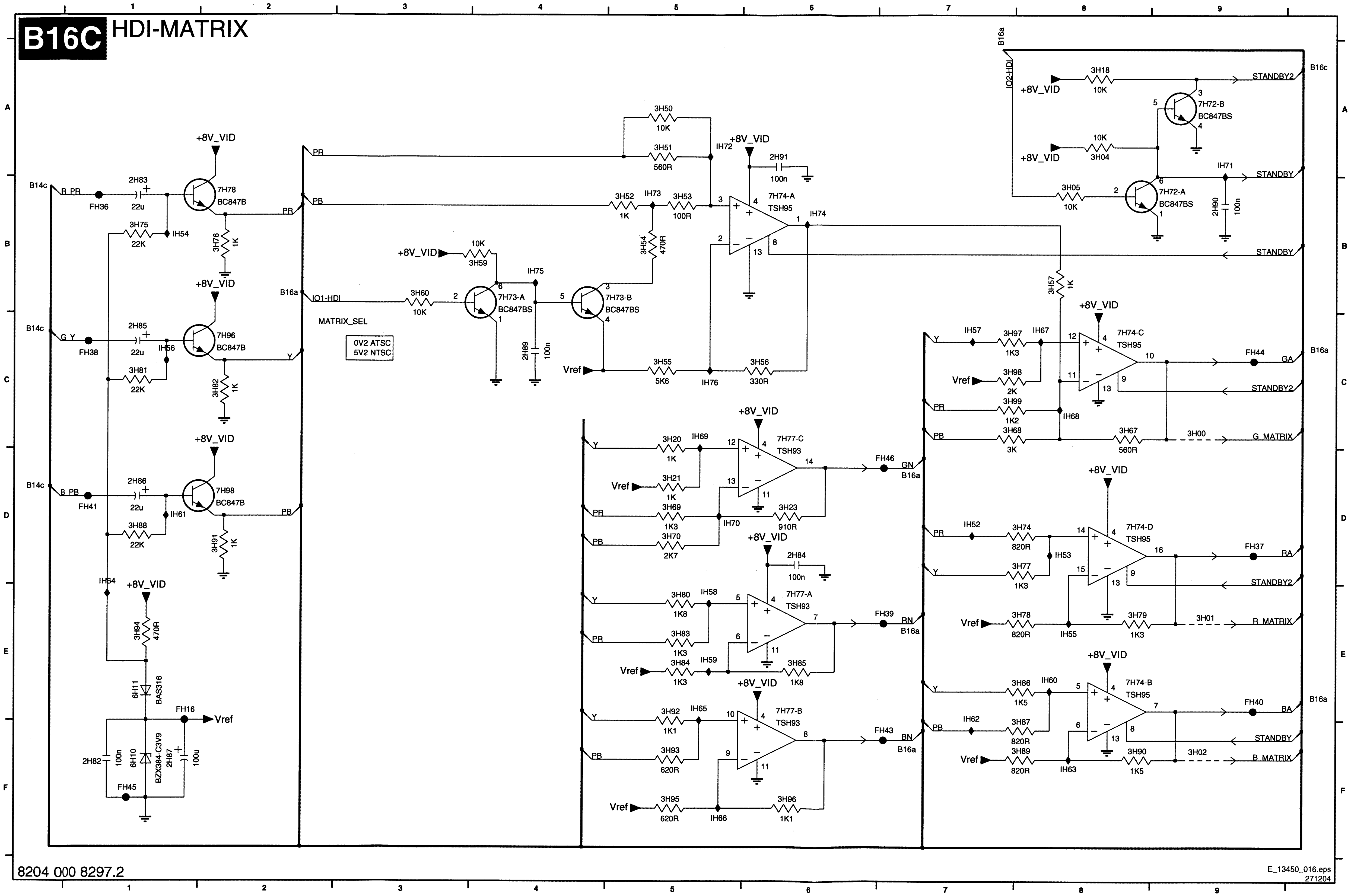
E_13450_015.eps
271204

Personal Notes:

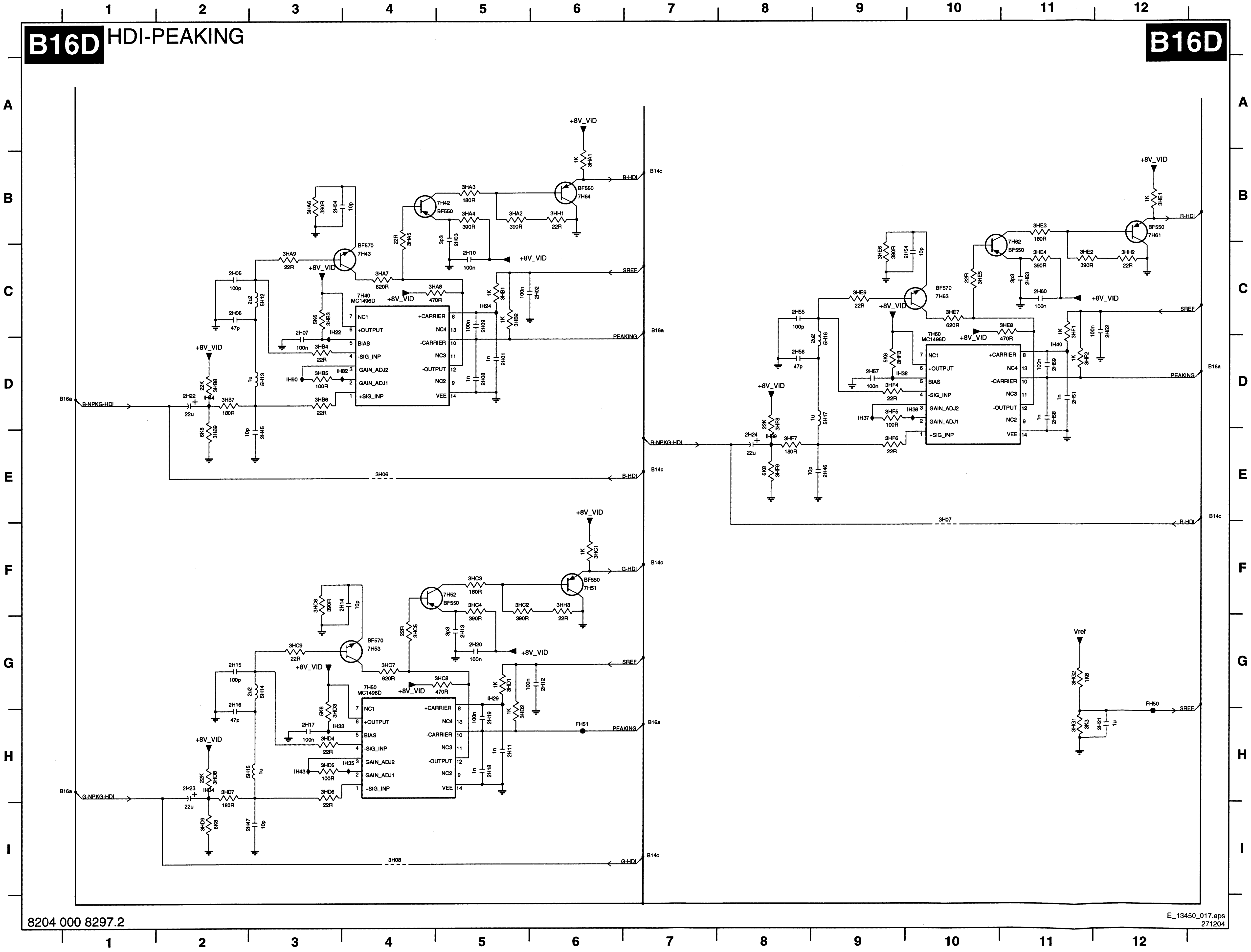
E_06532_012.eps
131004

SSB (AB): HDI Matrix


B16C
HDI-MATRIX
B14c R PR
FH36
2H83 22u
7H78 BC847B
3H75 22K
IH54
3H76 1K
+8V_VID
B14c G Y
FH38
2H85 22u
IH56
7H96 BC847B
3H81 22K
3H82 1K
B14c B PB
FH41
2H86 22u
IH61
7H98 BC847B
3H88 22K
3H91 1K
IH64
3H94 470R
6H11 BAS316
FH16
Vref
2H82 100n
6H10 BZX384-C3V9
2H87 100u
FH45
PR
PB
Y
B16a IO1-HDI
MATRIX_SEL
0V2 ATSC
5V2 NTSC
3H60 10K
3H59 10K
7H73-A BC847BS
IH75
2H89 100n
7H73-B BC847BS
3H50 10K
3H51 560R
3H52 1K
IH73
3H53 100R
3H54 470R
IH72
2H91 100n
7H74-A TSH95
IH74
3H55 5K6
IH76
3H56 330R
B16a IO2-HDI
3H18 10K
3H04 10K
3H05 10K
7H72-B BC847BS
7H72-A BC847BS
IH71
2H90 100n
STANDBY2
STANDBY
B16c
3H57 1K
IH57
3H97 1K3
IH67
7H74-C TSH95
3H98 2K
3H99 1K2
IH68
3H68 3K
3H67 560R
3H00
FH44
GA
G_MATRIX
3H20 1K
IH69
7H77-C TSH93
3H21 1K
3H69 1K3
IH70
3H23 910R
3H70 2K7
FH46
GN
B16a
2H84 100n
3H80 1K8
IH58
7H77-A TSH93
3H83 1K3
3H84 1K3
IH59
3H85 1K8
FH39
RN
3H92 1K1
IH65
7H77-B TSH93
3H93 620R
3H95 620R
IH66
3H96 1K1
FH43
BN
IH52
3H74 820R
IH53
7H74-D TSH95
3H77 1K3
3H78 820R
IH55
3H79 1K3
3H01
FH37
RA
R_MATRIX
3H86 1K5
IH60
7H74-B TSH95
IH62
3H87 820R
3H89 820R
IH63
3H90 1K5
3H02
FH40
BA
B_MATRIX
8204 000 8297.2
E_13450_016.eps
271204

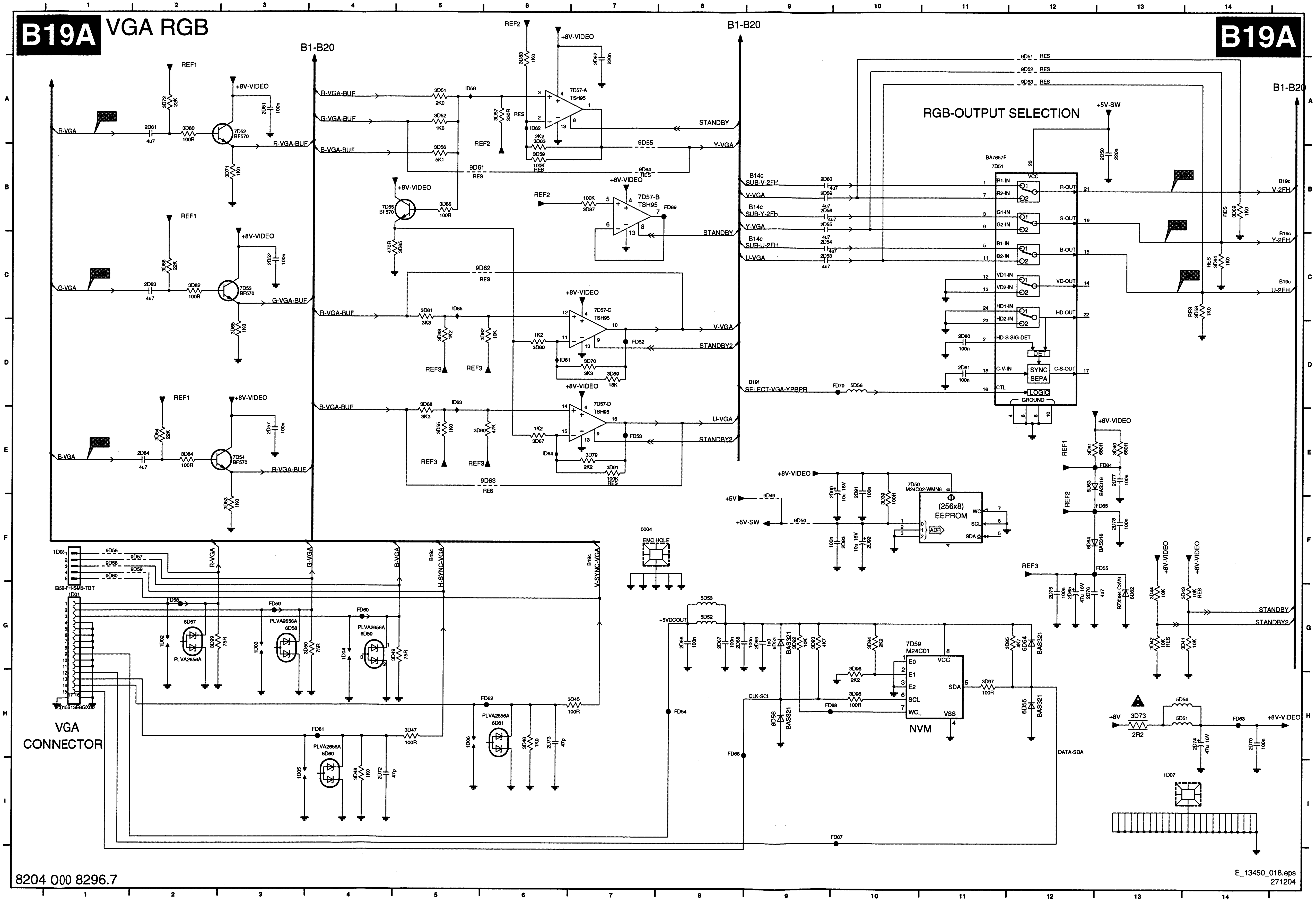
2H82	F1
2H83	B1
2H84	D6
2H85	C1
2H86	D1
2H87	F1
2H89	C4
2H90	B9
2H91	A6
3H00	C9
3H01	E9
3H02	F9
3H04	A8
3H05	B8
3H18	A8
3H20	C5
3H21	D5
3H23	D6
3H50	A5
3H51	A5
3H52	B5
3H53	B5
3H54	B5
3H55	C5
3H56	C6
3H57	B8
3H59	B4
3H60	B3
3H67	C8
3H68	C7
3H69	D5
3H70	D5
3H74	D8
3H75	B1
3H76	B2
3H77	D8
3H78	E8
3H79	E8
3H80	E5
3H81	C1
3H82	C2
3H83	E5
3H84	E5
3H85	E6
3H86	E8
3H87	F8
3H88	D1
3H89	F8
3H90	F8
3H91	D2
3H92	E5
3H93	F5
3H94	E1
3H95	F5
3H96	F6
3H97	C7
3H98	C7
3H99	C7
6H10	F1
6H11	E1
7H72-A	B9
7H72-B	A9
7H73-A	B4
7H73-B	B4
7H74-A	B6
7H74-B	E8
7H74-C	C8
7H74-D	D8
7H77-A	E6
7H77-B	E6
7H77-C	C6
7H78	B2
7H96	C2
7H98	D2
FH16	E1
FH36	B1
FH37	D9
FH38	C1
FH39	E7
FH40	E9
FH41	D1
FH43	F7
FH44	C9
FH45	F1
FH46	D7
IH52	D7
IH53	D8
IH54	B1
IH55	E8
IH56	C1
IH57	C7
IH58	E5
IH59	E5
IH60	E8
IH61	D1
IH62	E7
IH63	F8
IH64	D1
IH65	E5
IH66	F5
IH67	C8
IH68	C8
IH69	C5
IH70	D5
IH71	A9
IH72	A5
IH73	B5
IH74	B6
IH75	B4
IH76	C5

SSB (AB): HDI Peaking


B16D
HDI-PEAKING
B16D
1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
+8V_VID
3HA1
1K
B-HDI
B14c
BF550
7H64
3HA3
180R
7H42
BF550
3HA4
390R
3HA2
390R
3HH1
22R
3HA6
390R
2H04
10p
22R
3HA5
3p3
2H03
2H10
100n
BF570
7H43
3HA9
22R
2H05
100p
2u2
5H12
2H06
47p
3HA7
620R
3HA8
470R
7H40
MC1496D
SREF
3HB1
1K
3HB2
1K
2H02
100n
IH24
2H09
PEAKING
B16a
NC1
+OUTPUT
BIAS
-SIG_INP
GAIN_ADJ2
GAIN_ADJ1
+SIG_INP
+CARRIER
NC4
-CARRIER
NC3
-OUTPUT
NC2
VEE
2H07
100n
IH22
3HB3
5K6
3HB4
22R
3HB5
100R
IH82
IH90
3HB6
22R
2H01
2H08
1n
5H13
1u
B-NPKG-HDI
2H22
22u
IH44
3HB8
22K
3HB7
180R
3HB9
6K8
2H45
10p
3H06
B-HDI
B14c
+8V_VID
3HC1
1K
G-HDI
B14c
BF550
7H51
3HC3
180R
7H52
BF550
3HC4
390R
3HC2
390R
3HH3
22R
3HC6
390R
2H14
10p
3HC5
22R
2H13
3p3
2H20
100n
BF570
7H53
3HC9
22R
2H15
100p
2u2
5H14
2H16
47p
3HC7
620R
3HC8
470R
7H50
MC1496D
SREF
3HD1
1K
3HD2
1K
2H12
100n
IH29
2H19
FH51
PEAKING
B16a
2H17
100n
IH33
3HD3
5K6
3HD4
22R
3HD5
100R
IH35
IH43
3HD6
22R
2H11
2H18
1n
5H15
1u
G-NPKG-HDI
2H23
22u
IH34
3HD8
22K
3HD7
180R
3HD9
6K8
2H47
10p
3H08
G-HDI
B14c
+8V_VID
3HE1
1K
R-HDI
BF550
7H61
3HE3
180R
7H62
BF550
3HE4
390R
3HE2
390R
3HH2
22R
3HE6
390R
2H54
10p
3HE5
22R
2H53
3p3
2H60
100n
BF570
7H63
3HE9
22R
2H55
100p
2u2
5H16
2H56
47p
3HE7
620R
3HE8
470R
7H60
MC1496D
SREF
3HF1
1K
3HF2
1K
2H52
100n
IH40
2H59
PEAKING
B16a
2H57
100n
IH38
3HF3
5K6
3HF4
22R
3HF5
100R
IH36
IH37
3HF6
22R
2H51
2H58
1n
5H17
1u
R-NPKG-HDI
2H24
22u
IH39
3HF8
22K
3HF7
180R
3HF9
6K8
2H46
10p
3H07
R-HDI
B14c
Vref
3HG2
1K8
3HG1
3K3
2H21
1u
FH50
SREF
8204 000 8297.2
E_13450_017.eps
271204

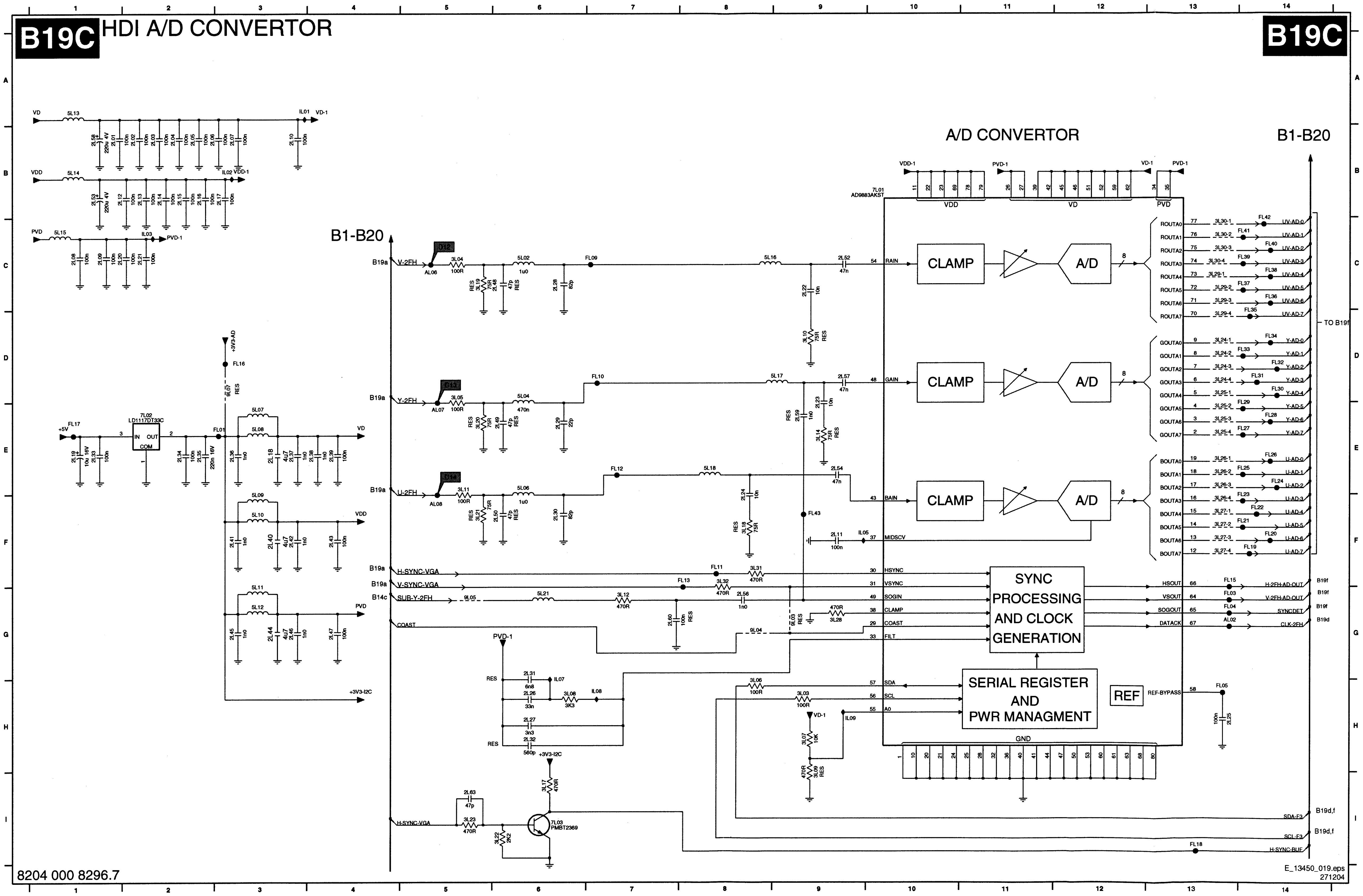
2H01	D5
2H02	C6
2H03	B5
2H04	B3
2H05	C2
2H06	C2
2H07	C3
2H08	D5
2H09	C5
2H10	C5
2H11	H5
2H12	G6
2H13	G5
2H14	F4
2H15	G2
2H16	G2
2H17	H3
2H18	H5
2H19	H5
2H20	G5
2H21	H12
2H22	D2
2H23	H2
2H24	E8
2H45	E3
2H46	E9
2H47	I3
2H51	D11
2H52	C12
2H53	C11
2H54	C10
2H55	C8
2H56	D8
2H57	D9
2H58	D11
2H59	D11
2H60	C11
3H06	E4
3H07	F10
3H08	I4
3HA1	B6
3HA2	B5
3HA3	B5
3HA4	B5
3HA5	B4
3HA6	B3
3HA7	C4
3HA8	C4
3HA9	C3
3HB1	C5
3HB2	C5
3HB3	C3
3HB4	D3
3HB5	D3
3HB6	D3
3HB7	D2
3HB8	D2
3HB9	E2
3HC1	F6
3HC2	F5
3HC3	F5
3HC4	F5
3HC5	G4
3HC6	F3
3HC7	G4
3HC8	G5
3HC9	G3
3HD1	G5
3HD2	H5
3HD3	H3
3HD4	H3
3HD5	H3
3HD6	H3
3HD7	H2
3HD8	H2
3HD9	I2
3HE1	B12
3HE2	C11
3HE3	B11
3HE4	C11
3HE5	C10
3HE6	C9
3HE7	C10
3HE8	C11
3HE9	C9
3HF1	C11
3HF2	D11
3HF3	D9
3HF4	D9
3HF5	D9
3HF6	E9
3HF7	E8
3HF8	D8
3HF9	E8
3HG1	H11
3HG2	G11
3HH1	B6
3HH2	C12
3HH3	F6
5H12	C3
5H13	D3
5H14	G3
5H15	H3
5H16	D9
5H17	D9
7H40	C4
7H42	B5
7H43	C4
7H50	G4
7H51	F6
7H52	F5
7H53	G4
7H60	C10
7H61	B12
7H62	C11
7H63	C10
7H64	B6
FH50	G12
FH51	H6
IH22	C3
IH24	C5
IH29	G5
IH33	H3
IH34	H2
IH35	H4
IH36	D10
IH37	D9
IH38	D9
IH39	E8
IH40	D11
IH43	H3
IH44	D2
IH82	D3
IH90	D3

SSB (AB): VGA RGB


B19A
VGA RGB
B19A
RGB-OUTPUT SELECTION
B1-B20
REF1
REF2
REF3
+8V-VIDEO
+5V-SW
+5V
R-VGA
G-VGA
B-VGA
R-VGA-BUF
G-VGA-BUF
B-VGA-BUF
7D52 BF570
7D53 BF570
7D54 BF570
7D55 BF570
7D57-A TSH95
7D57-B TSH95
7D57-C TSH95
7D57-D TSH95
STANDBY
STANDBY2
Y-VGA
V-VGA
U-VGA
B14c
SUB-V-2FH
SUB-Y-2FH
SUB-U-2FH
B19f
SELECT-VGA-YPBPR
BA7657F
7D51
R1-IN
R2-IN
G1-IN
G2-IN
B1-IN
B2-IN
VD1-IN
VD2-IN
HD1-IN
HD2-IN
HD-S-SIG-DET
C-V-IN
CTL
VCC
R-OUT
G-OUT
B-OUT
VD-OUT
HD-OUT
C-S-OUT
DET
SYNC SEPA
LOGIC
GROUND
B19c
V-2FH
Y-2FH
U-2FH
7D50
M24C02-WMN6
(256x8)
EEPROM
WC
SCL
SDA
ADR
7D59
M24C01
E0
E1
E2
SCL
WC_
VCC
SDA
VSS
NVM
CLK-SCL
DATA-SDA
+5VDCOUT
BAS321
BAS316
PLVA2656A
BZX384-C3V9
H-SYNC-VGA
V-SYNC-VGA
B58-PH-SM3-TBT
1D01
1D08
VGA CONNECTOR
0004
EMC HOLE
1D07
+8V
3D73
2R2
+8V-VIDEO
8204 000 8296.7
E_13450_018.eps
271204

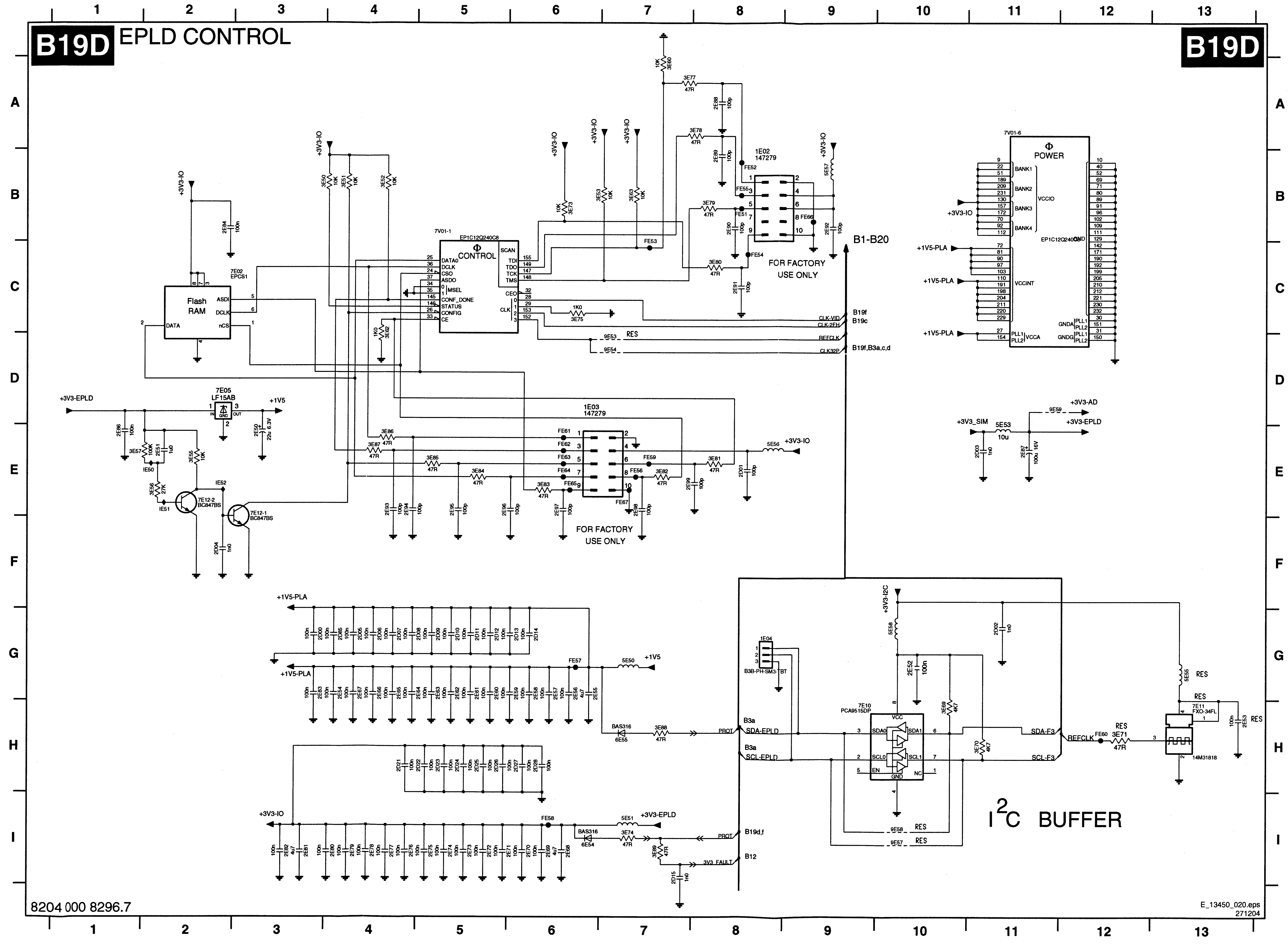
0004	F7
1D01	G1
1D02	G2
1D03	G3
1D04	G4
1D05	I3
1D06	H5
1D07	I13
1D08	F1
2D50	B13
2D51	A3
2D52	C3
2D53	C9
2D54	C9
2D55	B9
2D57	E3
2D58	B9
2D59	B9
2D60	B9
2D61	A2
2D62	A7
2D63	C2
2D64	E2
2D65	G12
2D66	G8
2D67	G8
2D68	G8
2D69	G9
2D70	H14
2D72	I4
2D73	H6
2D74	H14
2D75	G12
2D76	G12
2D77	E13
2D78	F13
2D80	D11
2D81	D11
2D90	E10
2D91	E10
2D92	F10
2D93	F10
3D39	F10
3D40	E13
3D41	G14
3D42	G13
3D43	G14
3D44	G13
3D45	H7
3D46	H6
3D47	H5
3D48	I4
3D49	G5
3D50	G4
3D51	A5
3D52	A5
3D53	F3
3D54	E2
3D55	E5
3D56	B5
3D57	A6
3D58	C14
3D59	B6
3D60	D6
3D61	C5
3D62	D6
3D63	A6
3D64	C14
3D65	D3
3D66	C2
3D67	E6
3D68	D5
3D69	B14
3D70	D7
3D71	B3
3D72	A2
3D73	H13
3D79	E7
3D80	A2
3D81	E12
3D82	C2
3D83	A6
3D84	E2
3D85	C5
3D86	B5
3D87	B7
3D88	D5
3D89	D7
3D90	E5
3D91	E7
3D92	G9
3D93	G9
3D94	G10
3D95	G12
3D96	G10
3D97	H11
3D98	H10
3D99	G2
5D51	H13
5D52	G8
5D53	G8
5D54	H13
5D56	D10
6D53	G9
6D54	G12
6D55	H12
6D56	H9
6D57	G2
6D58	G3
6D59	G4
6D60	H4
6D61	H6
6D62	G13
6D63	E12
6D64	F12
7D50	E10
7D51	B11
7D52	A3
7D53	C3
7D54	E3
7D55	B4
7D57-A	A6
7D57-B	B7
7D57-C	C7
7D57-D	D7
7D59	G10
9D49	F9
9D50	F9
9D51	A12
9D52	A12
9D53	A12
9D55	B7
9D56	F1
9D57	F2
9D58	F1
9D59	F2
9D60	F1
9D61	B5
9D62	C6
9D63	E6
9D64	B7
FD52	D7
FD53	E7
FD54	H8
FD55	F13
FD58	G2
FD59	G3
FD60	G4
FD61	H4
FD62	H6
FD63	H14
FD64	E13
FD65	F13
FD66	H8
FD67	I10
FD68	H10
FD69	B8
FD70	D10
ID59	A5
ID61	D6
ID62	A6
ID63	D5
ID64	E6
ID65	C5

SSB (AB): HDI A/D Convertor


B19C
HDI A/D CONVERTOR
B19C
A/D CONVERTOR
B1-B20
B1-B20
7L01
AD9883AKST
VDD-1
PVD-1
VD-1
PVD-1
VDD
VD
PVD
CLAMP
A/D
CLAMP
A/D
CLAMP
A/D
RAIN
GAIN
BAIN
MIDSCV
HSYNC
VSYNC
SOGIN
CLAMP
COAST
FILT
SDA
SCL
A0
SYNC PROCESSING AND CLOCK GENERATION
SERIAL REGISTER AND PWR MANAGMENT
REF
REF-BYPASS
GND
HSOUT
VSOUT
SOGOUT
DATACK
H-2FH-AD-OUT
V-2FH-AD-OUT
SYNCDET
CLK-2FH
UV-AD-0
UV-AD-7
Y-AD-0
Y-AD-7
U-AD-0
U-AD-7
TO B19f
SDA-F3
SCL-F3
H-SYNC-BUF
B19f
B19d
B19d,f
B19a V-2FH
B19a Y-2FH
B19a U-2FH
B19a H-SYNC-VGA
B19a V-SYNC-VGA
B14c SUB-Y-2FH
COAST
H-SYNC-VGA
7L02
LD1117DT33C
IN OUT
COM
+5V
VD
VDD
PVD
+3V3-AD
+3V3-I2C
PVD-1
7L03
PMBT2369
8204 000 8296.7
E_13450_019.eps
271204

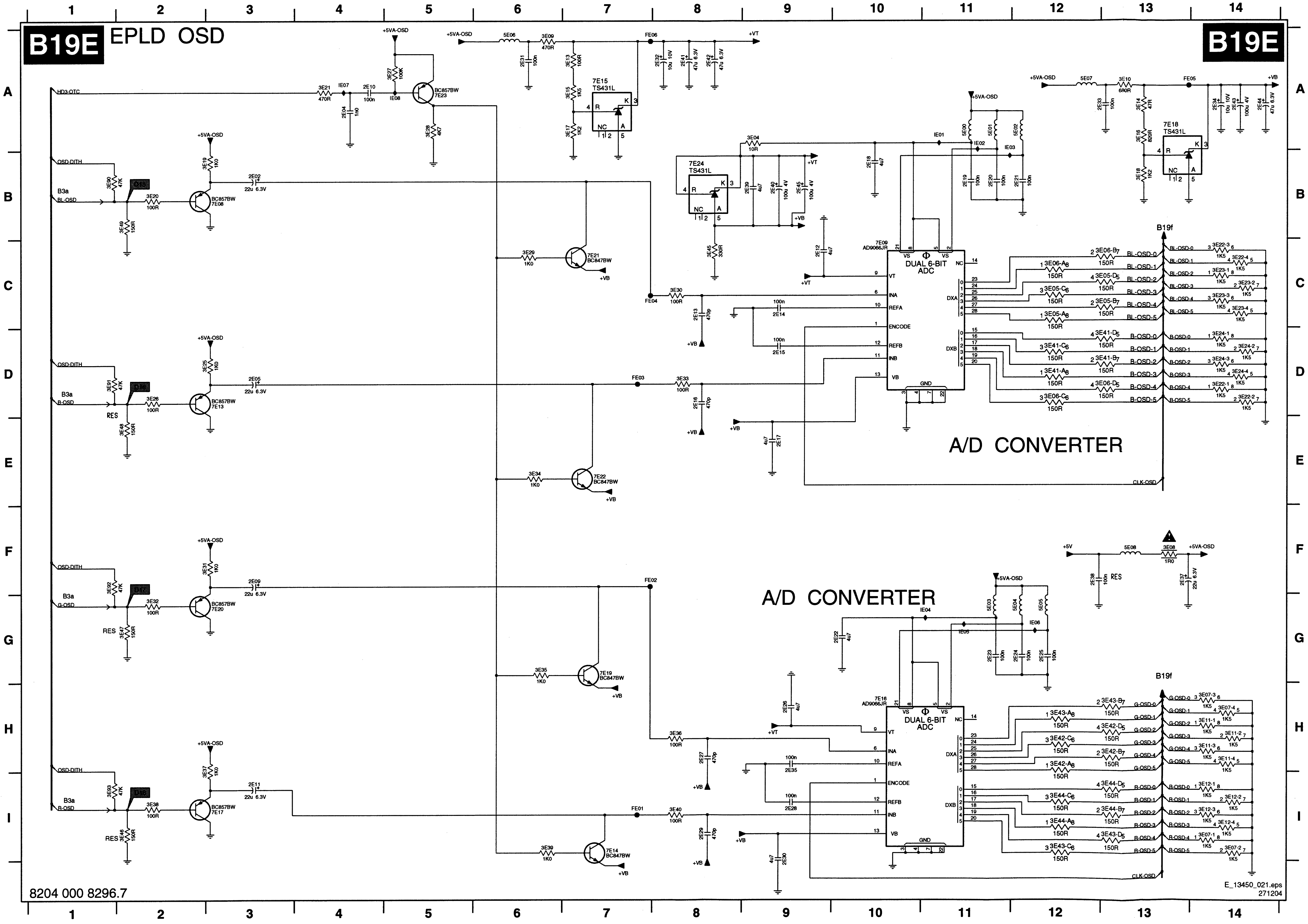
2L01 B1
2L02 B2
2L03 B2
2L04 B2
2L05 B2
2L06 B2
2L07 B3
2L08 C1
2L09 C1
2L10 B3
2L11 F9
2L12 B1
2L13 B2
2L14 B2
2L15 B2
2L16 B2
2L17 B3
2L18 E3
2L19 E1
2L20 C1
2L21 C2
2L22 C9
2L23 E9
2L24 F8
2L25 H13
2L26 H6
2L27 H6
2L28 C6
2L29 E6
2L30 F6
2L31 G6
2L32 H6
2L33 E1
2L34 E2
2L35 E2
2L36 E3
2L37 E3
2L38 E4
2L39 E4
2L40 F3
2L41 F3
2L42 F3
2L43 F4
2L44 G3
2L45 G3
2L46 G3
2L47 G4
2L48 C5
2L49 E6
2L50 F6
2L52 C9
2L53 B1
2L54 E9
2L56 G8
2L57 D9
2L58 B1
2L59 E9
2L60 G7
2L63 I5
3L03 H9
3L04 C5
3L05 D5
3L06 H8
3L07 H9
3L08 H6
3L09 I9
3L10 D9
3L11 E5
3L12 G7
3L14 E9
3L17 I6
3L18 F8
3L19 C5
3L20 E5
3L21 F5
3L22 I6
3L23 I5
3L24-1 D13
3L24-2 D13
3L24-3 D13
3L24-4 D13
3L25-1 D13
3L25-2 E13
3L25-3 E13
3L25-4 E13
3L26-1 E13
3L26-2 E13
3L26-3 E13
3L26-4 F13
3L27-1 F13
3L27-2 F13
3L27-3 F13
3L27-4 F13
3L28 G9
3L29-1 C13
3L29-2 C13
3L29-3 C13
3L29-4 D13
3L30-1 C13
3L30-2 C13
3L30-3 C13
3L30-4 C13
3L31 F8
3L32 F8
5L02 C6
5L04 D6
5L06 E6
5L07 E3
5L08 E3
5L09 F3
5L10 F3
5L11 G3
5L12 G3
5L13 A1
5L14 B1
5L15 C1
5L16 C8
5L17 D9
5L18 E8
5L21 G6
7L01 B10
7L02 E2
7L03 I6
9L03 G9
9L04 G8
9L05 G5
9L07 D3
AL02 G13
AL06 C5
AL07 E5
AL08 F5
FL01 E3
FL03 G13
FL04 G13
FL05 H13
FL09 C7
FL10 D7
FL11 F8
FL12 E7
FL13 F8
FL15 F13
FL16 D3
FL17 E1
FL18 I13
FL19 F14
FL20 F14
FL21 F14
FL22 F14
FL23 F14
FL24 E14
FL25 E14
FL26 E14
FL27 E14
FL28 E14
FL29 E14
FL30 D14
FL31 D14
FL32 D14
FL33 D14
FL34 D14
FL35 D14
FL36 C14
FL37 C14
FL38 C14
FL39 C14
FL40 C14
FL41 C14
FL42 C14
FL43 F9
IL01 A3
IL02 B3
IL03 C2
IL05 F9
IL07 G6
IL08 H7
IL09 H9

SSB (AB): EPLD Control


B19D
EPLD CONTROL
B19D
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I
Flash RAM
7E02 EPCS1
ASDI
DCLK
nCS
DATA
2E84 100n
+3V3-IO
3E50 10K
3E51 10K
3E52 10K
3E62 1K0
7V01-1
EP1C12Q240C8
CONTROL
DATA0
DCLK
CSO
ASDO
MSEL
CONF_DONE
STATUS
CONFIG
CE
SCAN
TDI
TDO
TCK
TMS
CEO
CLK
3E75 1K0
3E73 10K
3E53 10K
3E63 10K
3E60 10K
3E77 47R
3E78 47R
3E79 47R
3E80 47R
2E88 100p
2E89 100p
2E90 100p
2E91 100p
2E92 100p
1E02 147279
FE51 FE52 FE53 FE54 FE55 FE66
5E57
FOR FACTORY USE ONLY
B1-B20
CLK-VID
CLK-2FH
REFCLK
CLK32P
B19f
B19c
B19f,B3a,c,d
9E53 RES
9E54
7V01-6
POWER
BANK1
BANK2
BANK3
BANK4
VCCIO
VCCINT
VCCA
PLL1
PLL2
GNDA
GNDG
EP1C12Q240C8
+3V3-IO
+1V5-PLA
+3V3-EPLD
7E05 LF15AB
+1V5
IN GND OUT
2E86 100n
3E57 100K
2E51 1u0
2E50 22u 6.3V
3E55 10K
IE50
IE52
3E56 27K
IE51
7E12-2 BC847BS
7E12-1 BC847BS
2D04 1n0
1E03 147279
FE61 FE62 FE63 FE64 FE65 FE56 FE59 FE67
3E86 47R
3E87 47R
3E85 47R
3E84 47R
3E83 47R
3E82 47R
3E81 47R
5E56 +3V3-IO
2E93 100p
2E94 100p
2E95 100p
2E96 100p
2E97 100p
2E98 100p
2E99 100p
2D01 100p
FOR FACTORY USE ONLY
+3V3_SIM
5E53 10u
2D03 1n0
2E87 100u 16V
9E59
+3V3-AD
+3V3-EPLD
+1V5-PLA
2D00 2D85 2D05 2D06 2D07 2D08 2D09 2D10 2D11 2D12 2D13 2D14
+1V5-PLA
2E83 2E54 2E67 2E66 2E65 2E64 2E63 2E62 2E61 2E60 2E59 2E58 2E57 2E56 2E55
FE57
5E50 +1V5
2D21 2D22 2D23 2D24 2D25 2D26 2D27 2D28
+3V3-IO
2E82 2E81 2E80 2E79 2E78 2E77 2E76 2E75 2E74 2E73 2E72 2E71 2E70 2E69 2E68
FE58
5E51 +3V3-EPLD
BAS316 6E54
3E74 47R
3E89 47R
2D15 1n0
PROT
3V3_FAULT
B19d,f
B12
BAS316 6E55
3E88 47R
PROT
B3a
SDA-EPLD
B3a
SCL-EPLD
1E04
B3B-PH-SM3-TBT
+3V3-I2C
5E58
2E52 100n
2D02 1n0
3E69 4K7
3E70 4K7
7E10 PCA9515DP
VCC
SDA0
SDA1
SCL0
SCL1
EN
GND
NC
SDA-F3
SCL-F3
REFCLK
FE60
3E71 47R
RES
5E55 RES
7E11 FXO-34FL
14M31818
2E53 100n
RES
9E58 RES
9E57 RES
I2C BUFFER
8204 000 8296.7
E_13450_020.eps
271204

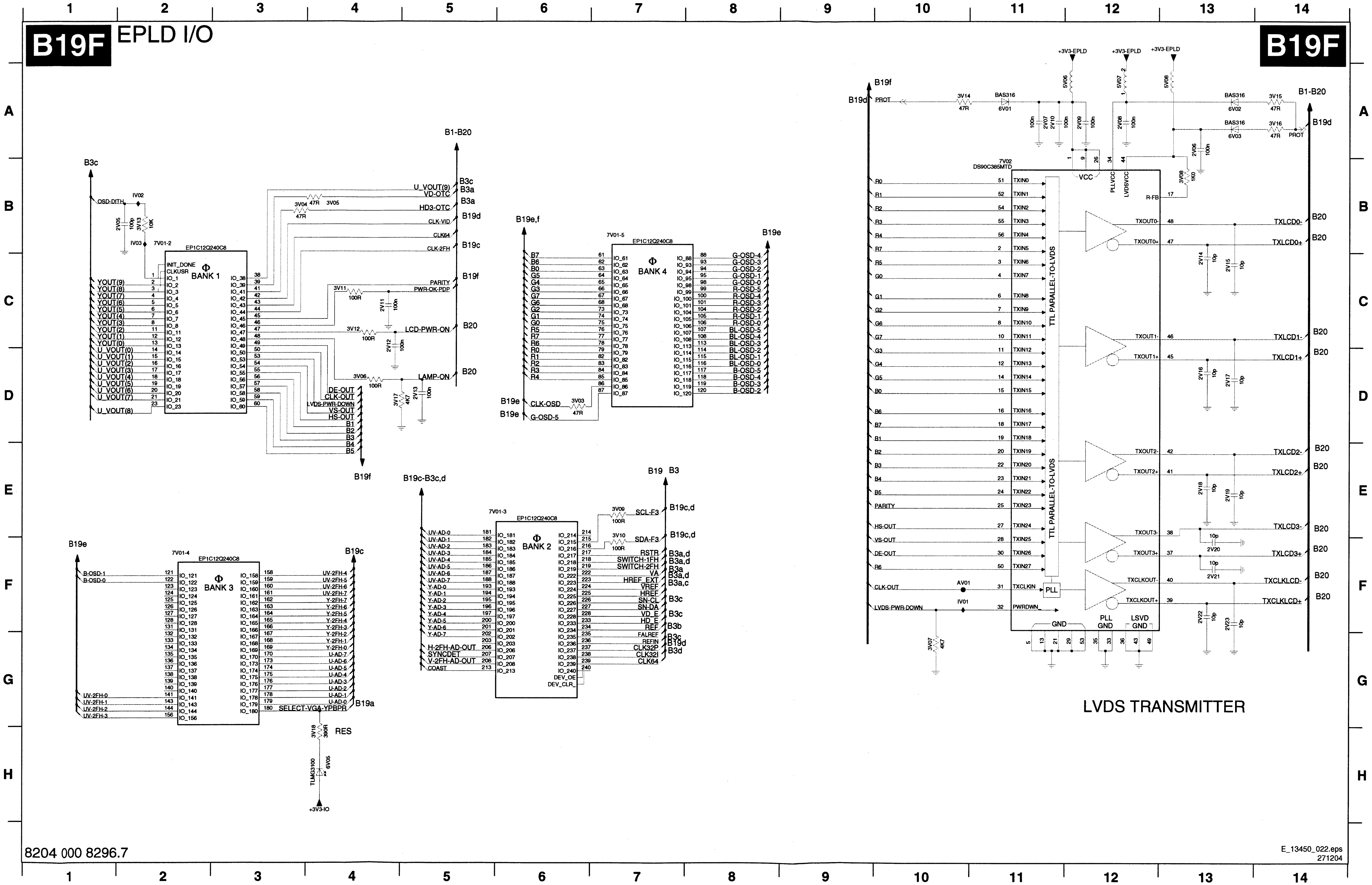
1E02	B8
1E03	D6
1E04	G8
2D00	G3
2D01	E8
2D02	G11
2D03	E11
2D04	F2
2D05	G4
2D06	G4
2D07	G4
2D08	G5
2D09	G5
2D10	G5
2D11	G5
2D12	G5
2D13	G6
2D14	G6
2D15	I7
2D21	H4
2D22	H5
2D23	H5
2D24	H5
2D25	H5
2D26	H5
2D27	H6
2D28	H6
2D85	G4
2E50	E3
2E51	E2
2E52	G10
2E53	H13
2E54	G4
2E55	G6
2E56	G6
2E57	G6
2E58	G6
2E59	G6
2E60	G5
2E61	G5
2E62	G5
2E63	G5
2E64	G5
2E65	G4
2E66	G4
2E67	G4
2E68	I6
2E69	I6
2E70	I6
2E71	I6
2E72	I5
2E73	I5
2E74	I5
2E75	I5
2E76	I4
2E77	I4
2E78	I4
2E79	I4
2E80	I4
2E81	I3
2E82	I3
2E83	G3
2E84	B2
2E86	E1
2E87	E11
2E88	A8
2E89	B8
2E90	B8
2E91	C8
2E92	B9
2E93	E4
2E94	E4
2E95	E5
2E96	E5
2E97	E6
2E98	E7
2E99	E7
3E50	B3
3E51	B4
3E52	B4
3E53	B6
3E55	E2
3E56	E2
3E57	E1
3E60	A7
3E62	D4
3E63	B7
3E69	H10
3E70	H11
3E71	H12
3E73	B6
3E74	I7
3E75	C6
3E77	A7
3E78	A8
3E79	B8
3E80	C8
3E81	E8
3E82	E7
3E83	E6
3E84	E5
3E85	E5
3E86	E4
3E87	E4
3E88	H7
3E89	I7
5E50	G7
5E51	I7
5E53	E11
5E55	G13
5E56	E8
5E57	B9
5E58	G10
6E54	I6
6E55	H7
7E02	C2
7E05	D2
7E10	H9
7E11	H13
7E12-1	E3
7E12-2	E2
7V01-1	B5
7V01-6	A11
9E53	D7
9E54	D7
9E57	I10
9E58	I10
9E59	D11
FE51	B8
FE52	B8
FE53	C7
FE54	C8
FE55	B8
FE56	E7
FE57	G6
FE58	I6
FE59	E7
FE60	H12
FE61	E6
FE62	E6
FE63	E6
FE64	E6
FE65	E6
FE66	B9
FE67	E7
IE50	E2
IE51	E2
IE52	E2

SSB (AB): EPLD OSD


B19E
EPLD OSD
B19E
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
HD3-OTC
OSD-DITH
B3a
BL-OSD
B-OSD
G-OSD
R-OSD
RES
+5VA-OSD
+VT
+VB
+5V
7E23 BC857BW
7E08 BC857BW
7E13 BC857BW
7E20 BC857BW
7E17 BC857BW
7E21 BC847BW
7E22 BC847BW
7E19 BC847BW
7E14 BC847BW
7E15 TS431L
7E24 TS431L
7E18 TS431L
7E09 AD9066JR
7E16 AD9066JR
DUAL 6-BIT ADC
VT
INA
REFA
ENCODE
REFB
INB
VB
VS
GND
NC
DXA
DXB
B19f
BL-OSD-0
BL-OSD-1
BL-OSD-2
BL-OSD-3
BL-OSD-4
BL-OSD-5
B-OSD-0
B-OSD-1
B-OSD-2
B-OSD-3
B-OSD-4
B-OSD-5
G-OSD-0
G-OSD-1
G-OSD-2
G-OSD-3
G-OSD-4
G-OSD-5
R-OSD-0
R-OSD-1
R-OSD-2
R-OSD-3
R-OSD-4
R-OSD-5
CLK-OSD
A/D CONVERTER
A/D CONVERTER
FE01
FE02
FE03
FE04
FE05
FE06
8204 000 8296.7
E_13450_021.eps
271204

2E02	B3
2E04	A4
2E05	D3
2E09	F3
2E10	A4
2E11	I3
2E12	C9
2E13	C8
2E14	C9
2E15	D9
2E16	D8
2E17	E9
2E18	B10
2E19	B11
2E20	B11
2E21	B12
2E22	G10
2E23	G11
2E24	G12
2E25	G12
2E26	H9
2E27	H8
2E28	I9
2E29	I8
2E30	I9
2E31	A6
2E32	A8
2E33	A12
2E34	A14
2E35	H9
2E37	F13
2E38	F12
2E39	B9
2E40	B9
2E41	A8
2E42	A8
2E43	A14
2E44	A14
2E45	B9
3E04	A9
3E05-A	C12
3E05-B	C13
3E05-C	C12
3E05-D	C13
3E06-A	C12
3E06-B	C13
3E06-C	D12
3E06-D	D13
3E07-1	I14
3E07-2	I14
3E07-3	H14
3E07-4	H14
3E08	F13
3E09	A6
3E10	A13
3E11-1	H14
3E11-2	H14
3E11-3	H14
3E11-4	H14
3E12-1	I14
3E12-2	I14
3E12-3	I14
3E12-4	I14
3E13	A7
3E14	A13
3E15	A7
3E16	A13
3E17	A7
3E18	B13
3E19	B3
3E20	B2
3E21	A4
3E22-1	D14
3E22-2	D14
3E22-3	C14
3E22-4	C14
3E23-1	C14
3E23-2	C14
3E23-3	C14
3E23-4	C14
3E24-1	D14
3E24-2	D14
3E24-3	D14
3E24-4	D14
3E25	D3
3E26	D2
3E27	A5
3E28	A5
3E29	C6
3E30	C8
3E31	F3
3E32	G2
3E33	D8
3E34	E6
3E35	G6
3E36	H8
3E37	H3
3E38	I2
3E39	I6
3E40	I8
3E41-A	D12
3E41-B	D13
3E41-C	D12
3E41-D	D13
3E42-A	H12
3E42-B	H13
3E42-C	H12
3E42-D	H13
3E43-A	H12
3E43-B	H13
3E43-C	I12
3E43-D	I13
3E44-A	I12
3E44-B	I13
3E44-C	I12
3E44-D	I13
3E45	C8
3E46	I2
3E47	G2
3E48	E2
3E49	B2
3E90	B1
3E91	D1
3E92	F1
3E93	I1
5E00	A11
5E01	A11
5E02	A12
5E03	G11
5E04	G12
5E05	G12
5E06	A6
5E07	A12
5E08	F13
7E08	B3
7E09	C10
7E13	D3
7E14	I7
7E15	A7
7E16	H10
7E17	I3
7E18	A13
7E19	G7
7E20	G3
7E21	C7
7E22	E7
7E23	A5
7E24	B8
FE01	I7
FE02	F7
FE03	D7
FE04	C7
FE05	A13
FE06	A7
IE01	A11
IE02	A11
IE03	A11
IE04	G11
IE05	G11
IE06	G12
IE07	A4
IE08	A5

SSB (AB): EPLD I/O

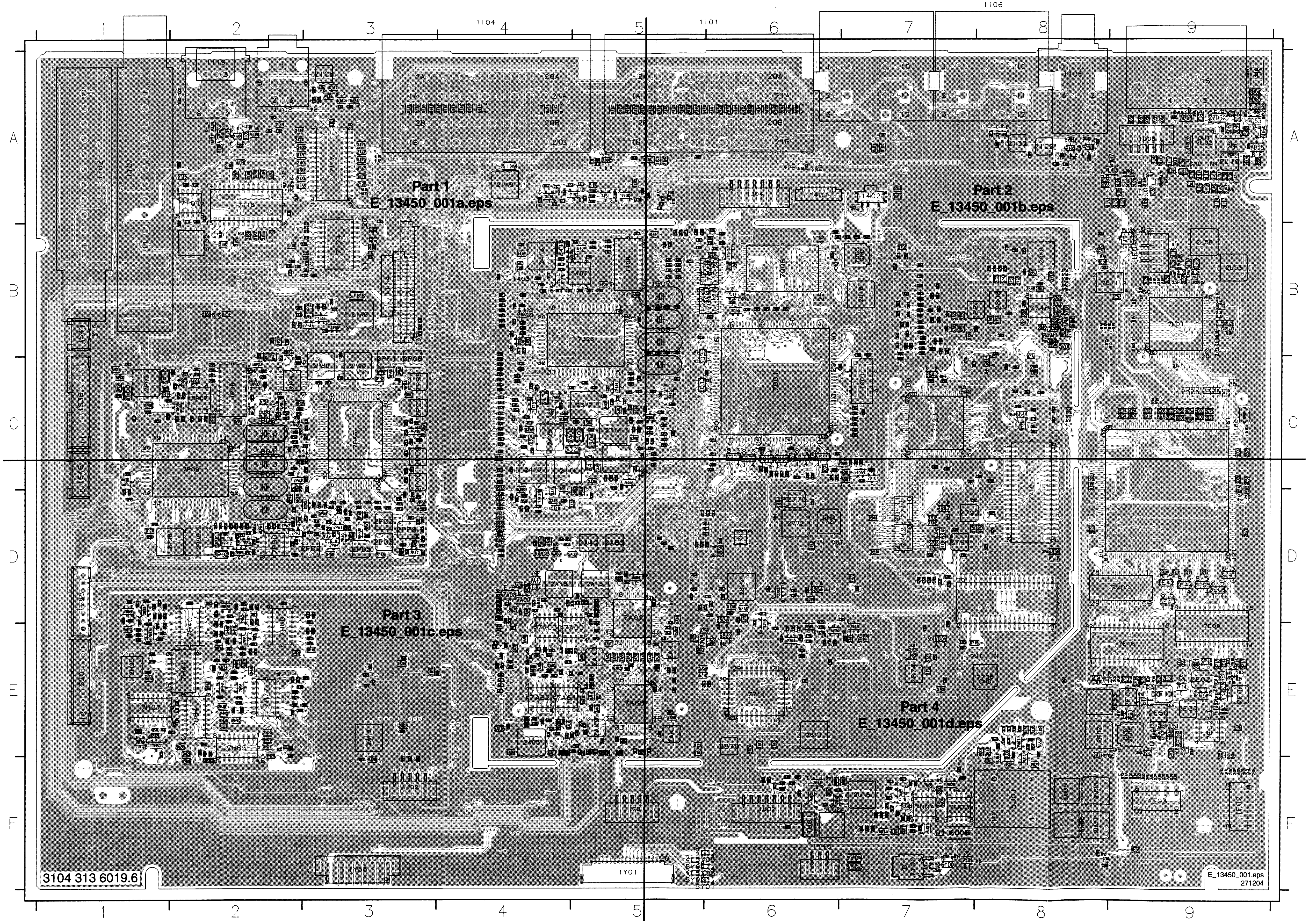

B19F
EPLD I/O
B19F
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H
EP1C12Q240C8
BANK 1
BANK 2
BANK 3
BANK 4
7V01-2
7V01-3
7V01-4
7V01-5
7V02
DS90C385MTD
TTL PARALLEL-TO-LVDS
PLL
VCC
PLLVCC
LVDSVCC
GND
PLL GND
LSVD GND
LVDS TRANSMITTER
+3V3-EPLD
+3V3-IO
B1-B20
B3c
B3a
B19c
B19d
B19e
B19e,f
B19f
B19a
B19c-B3c,d
B19 B3
B20
U_VOUT(9)
VD-OTC
HD3-OTC
CLK-VID
CLK64
CLK-2FH
PARITY
PWR-OK-PDP
LCD-PWR-ON
LAMP-ON
DE-OUT
CLK-OUT
LVDS-PWR-DOWN
VS-OUT
HS-OUT
OSD-DITH
SELECT-VGA-YPBPR
RES
SCL-F3
SDA-F3
RSTR
SWITCH-1FH
SWITCH-2FH
VA
HREF_EXT
VREF
HREF
SN-CL
SN-DA
VD_E
HD_E
REF
FALREF
REFIN
CLK32P
CLK32I
CLK64
DEV_OE
DEV_CLR
H-2FH-AD-OUT
SYNCDET
V-2FH-AD-OUT
COAST
CLK-OSD
G-OSD-5
PROT
TXLCD0-
TXLCD0+
TXLCD1-
TXLCD1+
TXLCD2-
TXLCD2+
TXLCD3-
TXLCD3+
TXCLKLCD-
TXCLKLCD+
BAS316
TLMG3100

8204 000 8296.7

E_13450_022.eps
271204

2V05	B2
2V06	A13
2V07	A11
2V08	A12
2V09	A12
2V10	A11
2V11	C4
2V12	C4
2V13	D5
2V14	C13
2V15	C13
2V16	D13
2V17	D13
2V18	E13
2V19	E13
2V20	F13
2V21	F13
2V22	F13
2V23	F13
3V03	D6
3V04	B3
3V05	B4
3V06	D4
3V07	G10
3V08	B13
3V09	E7
3V10	F7
3V11	C4
3V12	C4
3V13	B2
3V14	A10
3V15	A14
3V16	A14
3V17	D4
3V18	H4
5V06	A12
5V07	A12
5V08	A13
6V01	A11
6V02	A13
6V03	A13
6V05	H4
7V01-2	B2
7V01-3	E6
7V01-4	F2
7V01-5	B7
7V02	B11
AV01	F10
IV01	F10
IV02	B2
IV03	B2

Layout Small Signal Panel (AB) (Top Side Overview)


Part 1
E_13450_001a.eps
Part 2
E_13450_001b.eps
Part 3
E_13450_001c.eps
Part 4
E_13450_001d.eps
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
1104
1101
1106
3104 313 6019.6
E_13450_001.eps
271204

Layout Small Signal Panel (AB) Mapping (Top Side)

1001	C7
1304	A6
1401	A6
1402	A7
1403	B4
1408	B5
1702	D6
1D01	A9
1D07	F8
1D08	A9
1E02	F9
1E03	F9
1E04	B9
1I01	A6
1I02	F3
1I03	A2
1I04	A4
1I05	A9
1I06	A7
1I07	A7
1I08	A2
1I11	B3
1I13	B3
1I14	B3
1I19	A2
1I70	F5
1P00	D2
1P01	C2
1P02	C2
1P03	C2
1P06	C2
1P10	C2
1P11	C2
1P12	C2
1S20	E1
1S36	C1
1S43	B1
1S46	C1
1S88	D1
1T01	A2
1T02	A1
1U01	F6
1U02	F6
1Y01	F5
1Y45	F6
1Y55	F3
2002	B7
2004	C7
2005	C7
2006	C7
2007	C7
2008	C7
2009	C6
2011	C6
2012	C6
2014	C7
2016	B7
2018	B7
2020	C7
2025	B6
2027	C6
2028	C6
2029	C6
2031	B6
2034	B6
2035	B5
2037	B6
2039	B6
2058	B7
2059	B7
2067	C6
2070	C6
2071	C6
2073	C6
2301	C5
2305	C4
2314	C5
2315	C5
2316	C5
2317	C5
2318	C5
2322	C5
2324	D4
2327	B5
2329	C5
2330	C5
2331	C5
2332	C5
2333	D5
2334	C5
2336	C5
2339	B5
2340	C5
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3I17	B3
3I18	B3
3I21	B3
3I22	B3
3I23	B3
3I24	B3
3I25	B3
3I28	B2
3I29	B2
3I94	A8
3I95	A8
3I99	A8
3IA4	A5
3IA5	A5
3IA6	A8
3IA7	A8
3IA8	A8
3IA9	A8
3IB0	A8
3IC0	A2
3IC9	A2
3ID3	A2
3II8	A2
3II9	B2
3IJ0	A3
3IJ1	A3
3IK0	B2
3IK8	B3
3IL0	A4
3IL1	A4
3IL2	A4
3IL3	A5
3IL4	A5
3IL5	A4
3IL6	A4
3IM4	A5
3IM5	A5
3IM6	A5
3IM7	A5
3IM8	A5
3IM9	A5
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3IN4	A4
3IN7	A5
3IP0	B3
3IP1	B2
3IP2	B2
3IP3	A5
3IP4	B2
3IP5	B3
3IP6	B3
3IP7	B3
3IP9	A3
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3IQ1	A5
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3IS1	A3
3IS8	A2
3IS9	A2
3IT1	A8
3IT3	A8
3IT4	A8
3IT5	A3
3IT6	A3
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3L04	A9
3L05	A9
3L06	B9
3L07	B9
3L08	B9
3L09	B9
3L10	B9
3L11	A9
3L12	B9
3L14	B9
3L17	A9
3L18	B9
3L19	A9
3L20	A9
3L21	A9
3L22	A8
3L23	A8
3L24	C9
3L25	C9
3L26	C9
3L27	C9
3L28	B9
3L29	C9
3L30	C9
3L31	A8
3L32	A9
3P00	C1
3P01	D2
3P02	D2
3P07	C2
3P08	C2
3P10	C1
3P17	C2
3P18	C2
3P19	C2
3P20	C2
3P25	C2
3P26	C2
3P27	C2
3P28	C1
3P29	D2
3P30	C1
3P34	D1
3P35	D1
3P41	D2
3P42	D2
3P43	D2
3P44	D1
3P61	C3
3P77	D2
3P78	D2
3P90	C2
3P91	C2
3P93	C3
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3PA1	D2
3PA2	D2
3PA3	D3
3PA4	D3
3PA5	C2
3PA6	D3
3PA7	D3
3PA8	D3
3PA9	D3
3PB0	D2
3PB1	D2
3PB2	D2
3PB3	D3
3PB4	D2
3PB5	D3
3PB6	D3
3PB7	D2
3PB8	C2
3PB9	D2
3PC1	C3
3PC2	D3
3PC3	D3
3PC4	D3
3PC6	D3
3PC7	C3
3PC8	D3
3PC9	D3
3PD0	D3
3PD1	D3
3PD2	D3
3PD3	C2
3PD4	C2
3PD5	C3
3PD6	C2
3PD8	C2
3PD9	D3
3PE0	D2
3PE1	D2
3PE2	C3
3PE3	D2
3PE4	C2
3PE5	C2
3PE9	D3
3PF0	D3
3PF1	C2
3PF2	D3
3PF3	C2
3PF4	C3
3PF6	D3
3PF7	D3
3PF8	D3
3PF9	D3
3PG0	D3
3PG2	D2
3PG3	D3
3PG4	D3
3PG5	C3
3PG6	D3
3PH2	D3
3PH3	C3
3PH4	C2
3PH8	D3
3S01	D4
3S08	D4
3S15	B1
3S16	B1
3S20	D4
3T05	A2
3T06	A2
3U01	F7
3U02	E8
3U03	E8
3U04	E8
3U05	F8
3U06	F7
3U07	F7
3U08	F7
3U09	E8
3U10	F7
3U11	E8
3U13	F7
3U14	E8
3U15	F7
3U16	F7
3U17	F7
3U18	F7
3U19	F7
3U20	F7
3U21	F6
3U22	F7
3U23	F7
3U25	F6
3U26	F6
3U28	F7
3U29	E8
3U30	E8
3U31	E8
3U34	F6
3U46	F7
3U51	F8
3U52	F7
3U53	F7
3V06	E9
3V09	C9
3V10	C9
3V11	F8
3V12	E9
3V13	B9
3V17	E9
3V18	C9
3Y00	F7
3Y01	F7
3Y02	F8
3Y03	F7
3Y04	F7
3Y05	F8
3Y06	F8
3Y07	F7
5301	C5
5302	C5
5303	B6
5306	B6
5307	B6
5309	B5
5310	B5
5311	B5
5316	B4
5317	B4
5403	B5
5405	C5
5406	B4
5411	B5
5416	B4
5700	B8
5701	B8
5702	B8
5703	D6
5705	B7
5706	E7
5710	E5
5714	D6
5716	E7
5718	D7
5719	D7
5721	B8
5722	B7
5724	B7
5725	B7
5727	C8
5728	B8
5729	D6
5731	E7
5736	D6
5737	E7
5742	D6
5743	B8
5744	E5
5746	E6
5747	E6
5748	B8
5750	B7
5751	B7
5752	B8
5753	D8
5754	E5
5756	E5
5757	B8
5A00	D5
5A01	E4
5A03	D4
5A06	E4
5A16	E4
5A17	E4
5A18	E4
5A19	D5
5A23	E4
5A24	E4
5A37	D4
5A38	F3
5A60	E4
5A61	E5
5A62	E4
5A63	E4
5A67	E5
5D56	A9
5E00	E9
5E03	E9
5E04	E9
5E08	E9
5E53	E9
5E55	B9
5E56	E9
5E57	E9
5E58	B9
5H12	E1
5H13	E2
5H16	E2
5H17	E3
5H18	E1
5I01	B2
5L02	A9
5L04	A9
5L06	A9
5L07	A9
5L08	A9
5L09	A9
5L10	A9
5L11	A9
5L12	A9
5L13	A9
5L14	A9
5L15	A9
5L16	B9
5L17	B9
5L18	B9
5L21	A9
5P00	C1
5P01	C1
5P02	C2
5P03	C1
5P04	C2
5P06	C1
5P07	C2
5P51	C2
5PA0	C3
5PA1	C3
5PA2	C3
5PA3	C3
5PA4	D3
5PA5	D3
5PA6	D3
5PA7	D3
5PA8	D3
5PB0	C3
5S01	C4
5T02	B2
5U01	F8
5U02	F7
5U03	F7
5U04	F7
5U05	F8
5U06	F8
5Y01	F6
5Y02	F5
5Y03	F6
5Y04	F5
5Y05	F6
6001	C7
6003	C7
6301	C4
6309	D5
6310	D4
6311	D4
6316	C4
6319	D5
6404	B5
6830	D6
6832	E6
6833	D6
6834	D6
6836	E7
6838	D8
6839	E7
6840	D7
6841	C8
6842	C7
6843	D6
6844	C8
6847	D7
6A00	D4
6D62	A9
6D63	A9
6D64	A9
6H10	E2
6H11	E2
6I00	A7
6I01	A7
6I10	A3
6I11	A3
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6I13	A4
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6I23	A5
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6I26	A6
6I27	A6
6I28	A6
6I29	A6
6I32	A5
6I33	A5
6I35	A6
6I36	A6
6I37	A5
6I38	A5
6I41	A6
6I42	A6
6I43	A6
6I44	A6
6I45	A5
6I46	A5
6I47	A5
6I48	A5
6I50	A6
6I51	A6
6I75	A2
6I76	A2
6I77	A2
6I78	A2
6I79	A2
6IA0	A5
6IA1	A3
6IA2	A3
6IA3	A3
6IA4	A3
6P02	C2
6P03	C2
6PA0	D3
6PA1	D2
6PA2	D3
6PB2	D3
6PB3	C3
6PB4	B2
6PB8	D3
6U01	F7
6U03	F8
6U04	F8
6U05	E8
6U06	F7
6U07	F7
6U08	F7
6U09	F6
6U13	F7
6V05	C9
6Y00	F7
7001	C6
7005	B7
7006	B6
7008	C7
7009	C7
7010	C7
7013	B6
7014	B6
7017	B6
7018	B6
7019	B6
7304	C5
7320	B4
7323	C4
7340	D4
7361	D5
7362	C5
7402	B4
7405	B5
7408	C4
7409	C4
7411	B4
7413	C5
7414	C5
7415	C4
7705	E6
7706	E8
7707	E6
7708	E6
7709	D6
7710	E7
7711	E6
7715	E6
7717	E8
7719	D8
7723	C7
7725	D6
7727	D6
7742	D7
7744	D7
7746	B8
7747	B8
7748	B8
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7A01	D5
7A02	E5
7A03	D4
7A08	D4
7A09	D4
7A10	D4
7A61	E4
7A62	E4
7A63	E5
7D52	A9
7D53	A9
7D54	A9
7D55	A9
7E02	E9
7E05	E9
7E08	E9
7E09	D9
7E10	A9
7E11	B8
7E12	E9
7E13	E9
7E14	E9
7E16	D9
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7E19	E8
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7E22	E9
7E23	E9
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7H61	D2
7H62	E2
7H63	E2
7H64	D1
7H77	E2
7H78	E2
7H79	E1
7H80	E1
7H83	F2
7H84	E2
7H96	E2
7H97	E1
7I01	A5
7I02	A8
7I03	A8
7I04	A8
7I08	A2
7I17	A3
7I18	A2
7I24	B3
7I26	A4
7I27	A5
7I30	A5
7I31	A5
7I35	B3
7I36	B3
7I37	B3
7I38	A5
7L01	B9
7L02	A9
7L03	A9
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7P02	C2
7P05	C2
7P08	C1
7P09	D2
7P10	D2
7P50	D2
7P57	C3
7PA0	D3
7PA1	D3
7PA2	D2
7PA3	D2
7PA4	D3
7PA5	D2
7PA6	C3
7PA7	D3
7PA8	C3
7PA9	D3
7PB0	C2
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7PB2	D3
7PB3	C2
7PB4	C2
7PB6	D2
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7U02	F8
7U03	F7
7U04	F7
7U05	F7
7U06	F7
7U08	F7
7U09	F7
7U10	F6
7U11	F6
7U12	F7
7V01	C9
7V02	D9
7Y00	F7
7Y01	F7
9016	C6
9017	A7
9018	A7
9302	C5
9303	C5
9304	C5
9305	D5
9314	C5
9315	C5
9322	B4
9408	B4
9412	B4
9414	B4
9416	B4
9417	B4
9419	B4
9422	B4
9700	E6
9703	B8
9707	B8
9708	C8
9714	E7
9715	E7
9720	D7
9727	D8
9728	D8
9729	E7
9736	D7
9740	B7
9742	D7
9744	B8
9745	B8
9746	B8
9747	B8
9755	C8
9762	C8
9763	C8
9764	C7
9765	C7
9766	B7
9771	C8
9772	D7
9A04	D5
9A05	D5
9A06	D5
9A60	E5
9A61	D5
9A65	E4
9C00	B6
9C01	A7
9D56	A9
9D57	A9
9D58	A9
9D59	A9
9D60	A9
9D61	A9
9D62	A9
9D63	A9
9D64	A9
9E57	B8
9E58	B8
9E59	F9
9I05	A2
9I06	A2
9I08	B3
9I10	B2
9I12	B3
9I14	A5
9I17	B3
9I26	A5
9I27	A5
9I32	A2
9I33	A3
9I34	B2
9I35	A2
9I36	A2
9I37	B2
9I38	A3
9I39	A3
9I40	A2
9I41	A2
9I42	A3
9I43	A2
9I49	A3
9I80	A5
9I84	A5
9I86	A5
9I97	B3
9IA6	A4
9IA7	A5
9IA8	A5
9IB4	A3
9IC1	A6
9IC2	A6
9IC3	A6
9IC5	A6
9IC6	A6
9IC7	A6
9IC8	A4
9IC9	A4
9L05	A9
9L07	A9
9P01	C2
9P02	C2
9P03	C2
9P06	C1
9P08	C1
9P13	D2
9P14	C1
9P15	C2
9P19	C1
9P26	C2
9P27	C2
9P29	C2
9P70	C3
9PA0	D3
9PA1	D3
9PA2	D3
9PA3	D2
9PA4	D3
9PA5	C3
9PA6	D3
9PA7	C2
9PA8	C3
9PB1	C2
9PB2	C3
9PB3	D2
9PB4	D3
9PB5	C2
9S01	C4
9S02	C4
9S03	C4
9S04	B4
9S05	B4
9S06	B4
9S07	B4
9S08	B4
9S09	C4
9S10	B4
9S11	B4
9S12	C4
9S13	D4
9S14	C4
9S15	C4
9S16	C4
9S17	B4
9S18	C4
9S19	C4
9S20	C4
9S21	C4
9S22	C4
9S23	C4
9S24	C4
9S25	C4
9S26	C4
9S27	C4
9S28	C4
9S29	C4
9S30	B4
9S31	D4
9S32	D4
9S33	D4
9S34	D4
9S35	C4
9S36	D4
9S37	D4
9S38	D4
9T07	B2
9T08	A2
9T11	A2
9T12	A2
9T13	A2
9U01	F6
9U02	F6
9U03	F6
9U04	F6
9U05	F6
9U06	F6
9U07	F6
9U08	F6

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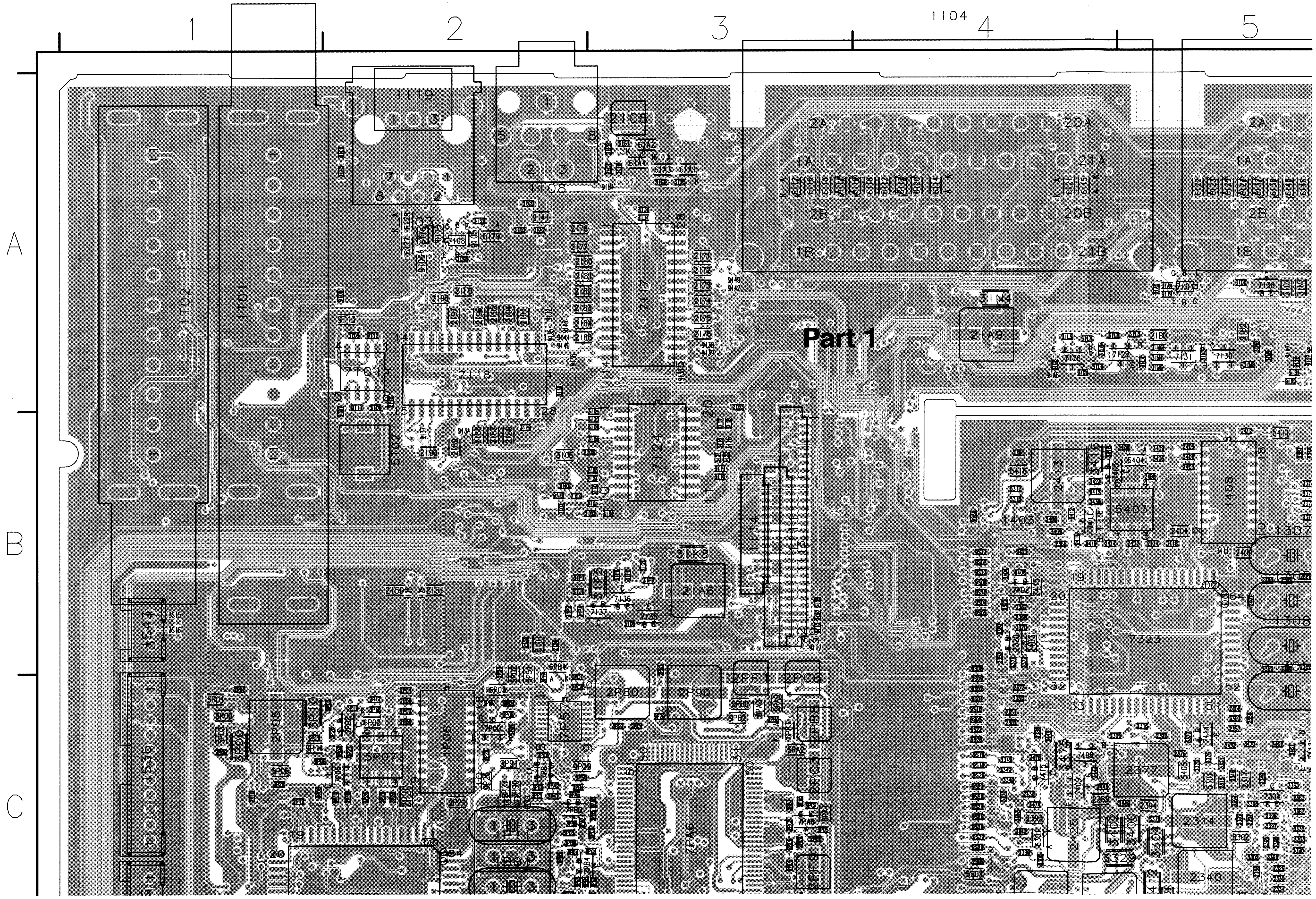
131004

Layout Small Signal Panel (AB) (Top Side Part 1)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B
C
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Part 1
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1108
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7118
7T01
5102
7124
1114
31N4
21A9
31K8
21A6
1403
2413
5403
1408
1307
1308
7323
2P80
2P90
2PF1
2PC6
2P05
5P07
1P06
7P57
1S43
1S36
7PA6
2377
2314
2425
2340
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1A
2B
1B
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21A
20B
21B

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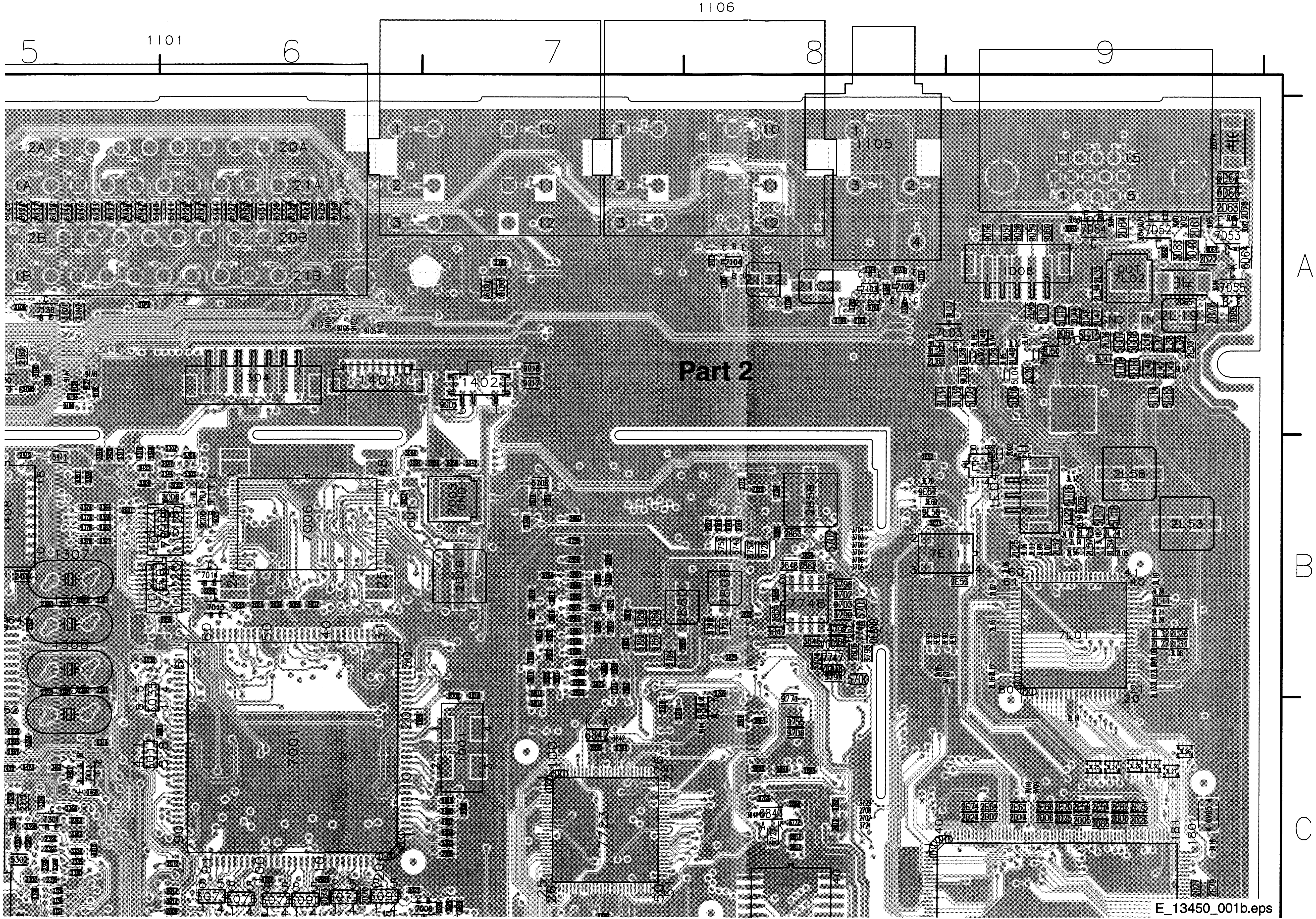
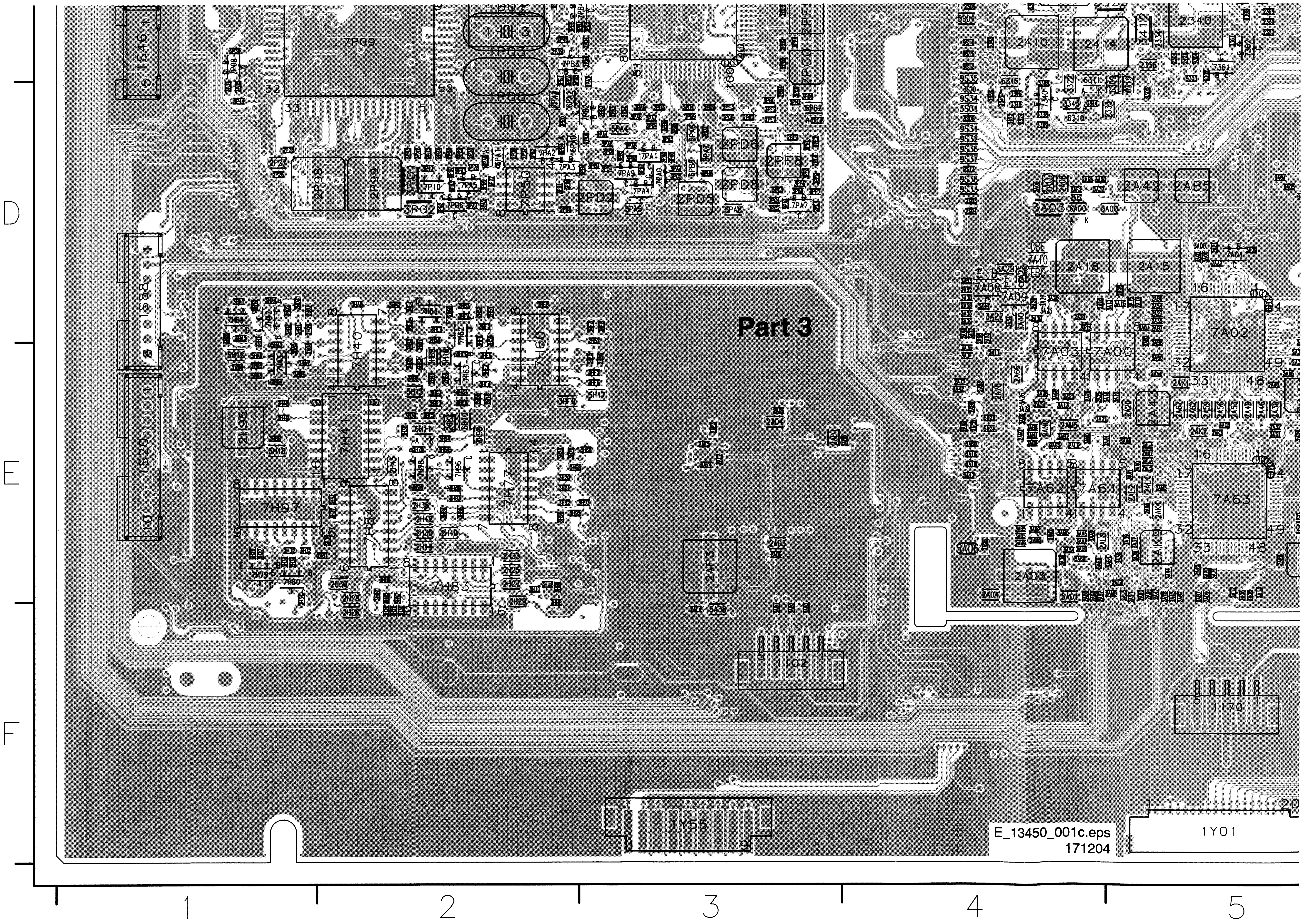
Layout Small Signal Panel (AB) (Top Side Part 2)


5
1101
6
7
1106
8
9
A
B
C
1105
2A
20A
1A
21A
2B
20B
1B
21B
1D08
7L02
OUT
2L19
7D52
7D53
7D54
7D55
7L03
1304
1401
1402
Part 2
1307
1308
1408
7006
7005
GND
2016
2858
2808
2880
7746
7E11
7L01
2L58
2L53
7001
1001
7723
7138
2E74
2E64
2E61
2E66
2E70
2E56
2E54
2E83
2E75

E_13450_001b.eps
171204

Layout Small Signal Panel (AB) (Top Side Part 3)


Part 3
D
E
F
1
2
3
4
5
1S46
1S88
1S20
7P09
1P03
1P00
2P98
2P99
7P50
2PD2
2PD5
2PD6
2PD8
2PF8
2PC0
7H40
7H41
7H60
7H77
7H83
7H84
7H97
2H95
2AF3
1102
1170
1Y55
1Y01
2410
2414
2340
2A42
2AB5
2A18
2A15
7A02
7A03
7A00
7A62
7A61
7A63
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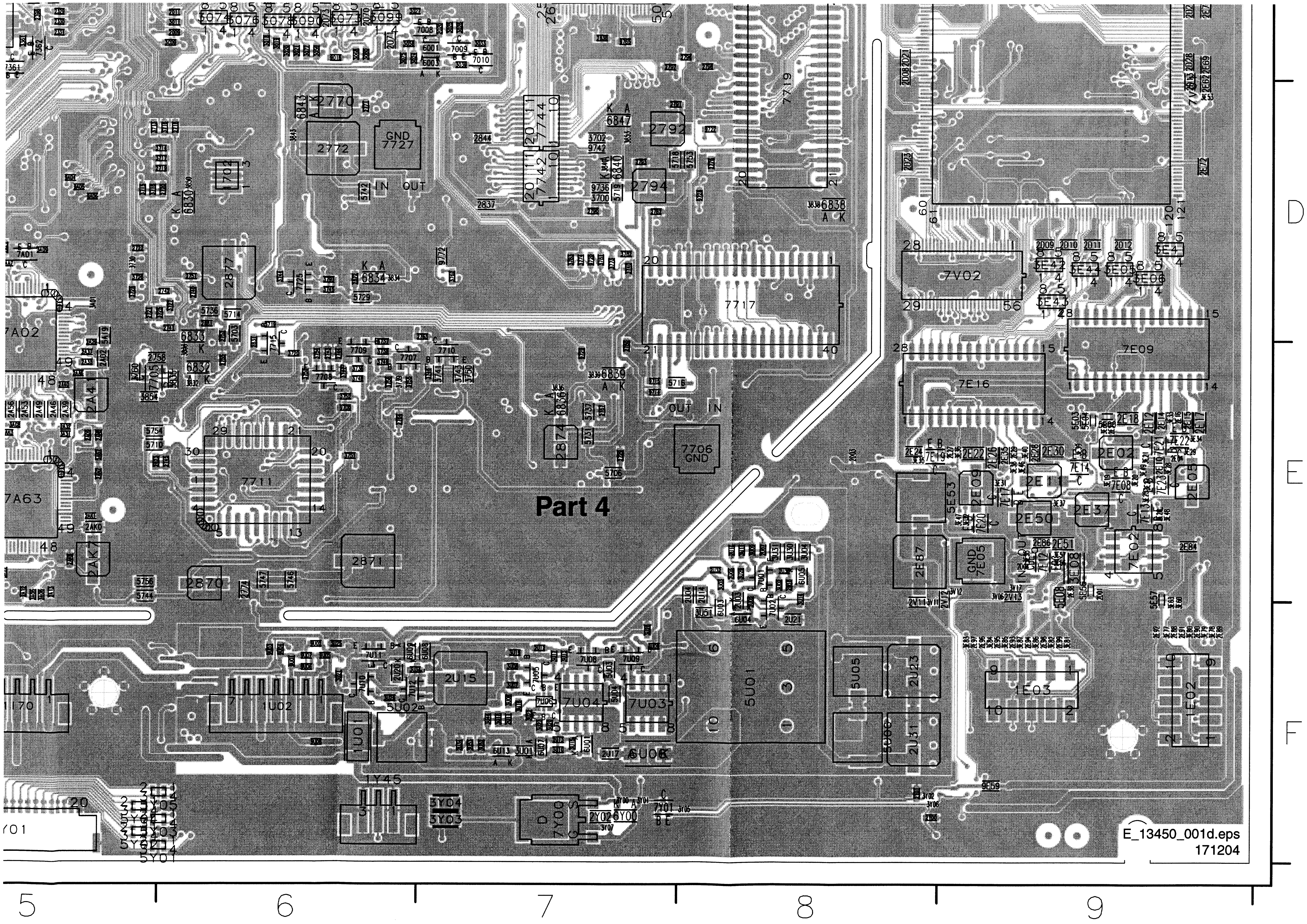
2A03
3A03
5A06
E_13450_001c.eps
171204

Layout Small Signal Panel (AB) (Top Side Part 4)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2772
GND 7727
IN OUT
7744
7742
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2792
2794
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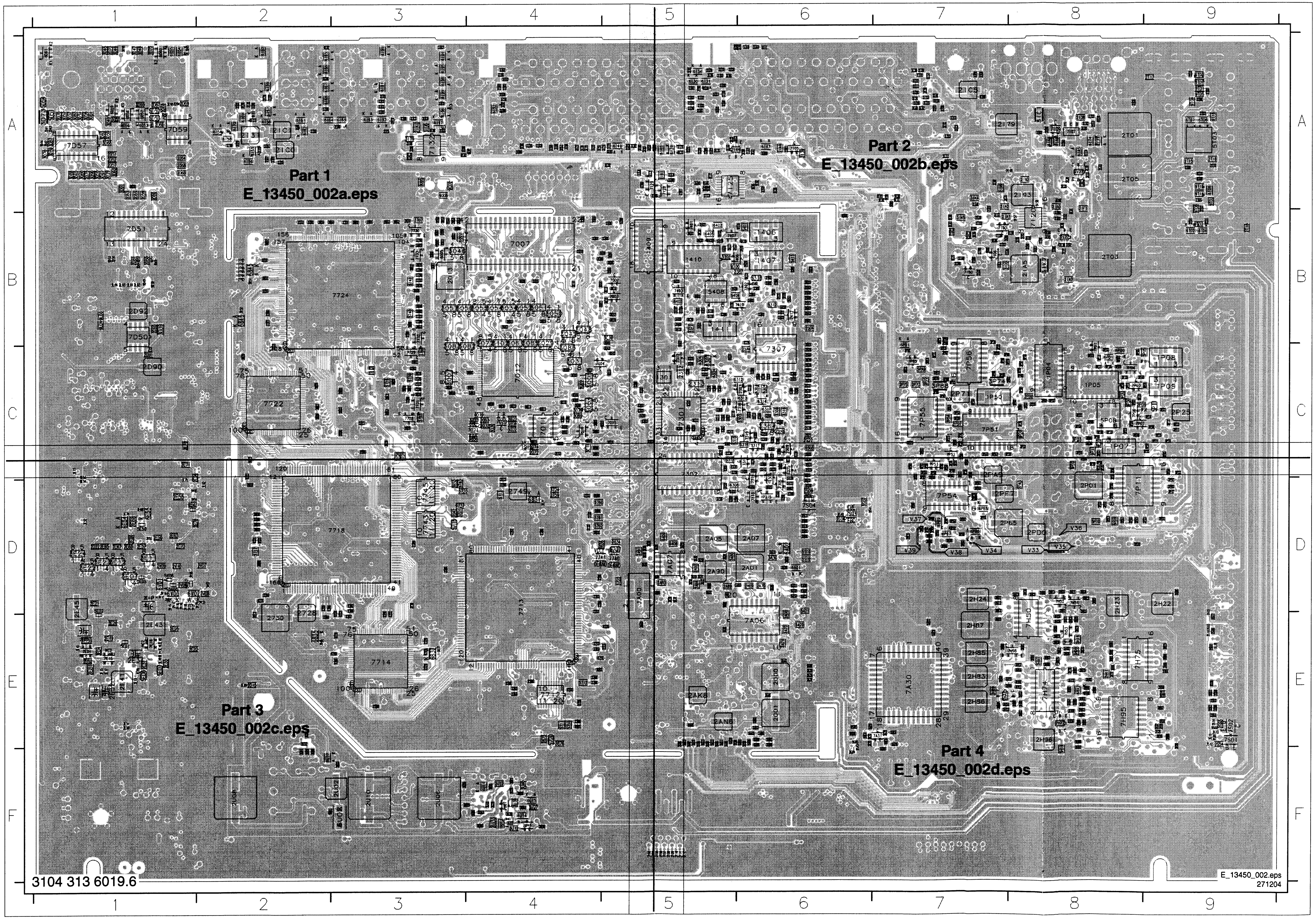
2837
3702
9742
9736
3700
6840
7719
6838
2877
6834
5729
5714
6833
6832
7705
7A02
7A63
2A41
2AK7
2AK0
7709
7707
7710
7706
3743
3756
6839
6836
2874
5716
7717
OUT IN
7706 GND
5706
7711
2871
2870
5744
5756
7V02
7E09
7E16
5E42
5E44
5E03
5E06
5E43
5E4
2009
2010
2011
2012
2E18
2E12
2E02
2E24
7E19
2E22
2E30
7E14
2E1
7E08
2E05
2E09
5E53
7E20
2E50
2E37
7E13
7E02
2E87
GND 7E05
2E86
2E51
7E12
7E03
2E84
2E08
2U15
7U11
5U02
1U02
1U01
1170
7U04
7U03
5U01
5U05
2U23
5U06
2U31
2U21
6U04
1E03
1E02
9E59
1Y45
5Y04
5Y03
7Y00
2Y02
6Y00
7Y01
5U08
1Y01
5Y01
5Y02
5Y03
5Y04
5Y05
E_13450_001d.eps
171204
D
E
F
5
6
7
8
9

Layout Small Signal Panel (AB) (Bottom Side Overview)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Part 2
E_13450_002b.eps
Part 3
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Part 4
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3104 313 6019.6
E_13450_002.eps
271204

Layout Small Signal Panel (AB) Mapping (Bottom Side)

1301 C5	2730 E2	2A99 D5	2H66 E8	2P52 C7	2T04 A9	3098 B3	3789 B3	3E62 D2	3I66 A4	3IT0 A2	3V05 D1	6D57 A1	7718 C2	9712 D2	9S67 E6
1305 C5	2731 B2	2AA0 E6	2H67 F8	2P53 C7	2T05 A8	3100 C4	3790 B3	3E73 C1	3I67 A4	3IT2 A2	3V07 D2	6D58 A1	7722 C2	9713 E2	9S68 E9
1306 B5	2732 B2	2AA1 E6	2H68 E9	2P54 C7	2T06 A9	3101 C4	3791 C3	3E74 D1	3I68 A4	3IT7 A7	3V08 D1	6D59 A1	7724 B3	9716 E3	9S69 E9
1307 B5	2733 B2	2AA5 D5	2H79 E9	2P55 C7	2T07 A9	3102 B4	3792 B2	3E75 D1	3I69 A5	3IT9 A3	3V14 D1	6D60 A1	7728 C3	9717 E3	9T01 A9
1308 B5	2734 B3	2AA9 E5	2H80 E9	2P56 D7	2T09 A9	3303 C6	3804 B2	3E88 D1	3I70 A5	3IU0 A3	3V15 D1	6D61 A1	7729 B3	9721 C2	9T02 B9
1406 B6	2736 B3	2AB0 D5	2H81 E8	2P57 C7	2T10 A9	3305 D5	3805 B3	3E89 E2	3I71 A5	3P03 C8	3V16 D1	6E54 D1	7730 B3	9722 C2	9T03 A9
1407 B6	2737 B3	2AB3 D5	2H83 E7	2P58 C7	2T13 A9	3307 C5	3806 B3	3H00 E8	3I72 A5	3P04 C8	5304 B4	6E55 D1	7731 C3	9723 D2	9T04 A9
1409 B5	2738 B3	2AB4 D5	2H84 E8	2P59 C7	2T14 B9	3308 C6	3807 C3	3H01 E8	3I73 A5	3P05 C8	5305 B4	6H12 E8	7732 B3	9724 D2	9T05 A9
1410 B5	2739 B3	2AB8 E6	2H85 E7	2P60 C7	2T15 A9	3310 C5	3808 B3	3H02 E8	3I74 A5	3P06 C8	5308 B5	6I30 A5	7733 B3	9725 E4	9T06 A9
1411 B5	2746 E4	2AD8 D6	2H86 E7	2P61 C7	2T16 A9	3311 C5	3809 B3	3H04 E8	3I75 A4	3P09 C8	5312 B6	6I31 A5	7740 D5	9726 E5	9T09 A9
1A00 D5	2747 B2	2AE0 D6	2H87 E7	2P62 C7	2T17 A9	3312 C6	3810 C3	3H05 E8	3I76 A4	3P11 C8	5313 C5	6I34 A5	7741 D4	9737 D3	9T10 A9
1P04 C8	2748 E4	2AE1 D6	2H89 E7	2P63 D7	2T18 B9	3313 C6	3813 B3	3H08 D8	3I77 A4	3P12 C8	5314 C6	6I39 A5	7743 D3	9743 D3	9T14 A9
1P05 C8	2749 D4	2AE4 E7	2H90 E8	2P64 D7	2U01 F2	3314 C5	3816 B3	3H18 E8	3I78 A4	3P13 C8	5315 C5	6I40 A5	7745 D3	9753 C3	9T15 A9
1P07 C8	2750 D4	2AE6 E6	2H91 E8	2P65 D8	2U02 F3	3315 C6	3828 C3	3H26 E9	3I79 A5	3P14 C8	5318 B6	6I49 A5	7A06 E5	9758 C3	9T16 A9
1P08 B9	2753 D4	2AE8 E7	2H96 F8	2P66 C7	2U06 F3	3316 C6	3831 D4	3H34 E9	3I80 A5	3P15 C8	5401 B5	6I52 A4	7A07 D5	9760 E3	
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1P50 C8	2757 D4	2AK8 E5	2H98 E9	2P68 D7	2U10 F3	3323 C5	3845 E2	3H45 E8	3I82 A5	3P21 C8	5404 B5	6I54 A2	7A31 E7	9A00 D5	
2000 E6	2759 D4	2AM4 E6	2I04 A7	2P69 D7	2U19 F3	3324 C5	3851 B2	3H46 E8	3I83 A4	3P22 D8	5408 B5	6I55 A2	7D50 C1	9A01 D5	
2001 E6	2760 D4	2AN2 E6	2I06 B7	2P70 C7	2U22 F4	3325 C6	3852 B2	3H50 E8	3I84 A4	3P23 D8	5415 B6	6I56 A2	7D51 B1	9A02 D5	
2003 C3	2761 D4	2AN3 E6	2I07 B7	2P71 C7	2U24 F4	3326 C5	3A17 D5	3H51 E8	3I85 A4	3P24 C8	5707 D5	6I57 A2	7D57 A1	9A03 E5	
2010 C5	2762 D3	2AN4 E6	2I08 B7	2P72 C7	2U25 F4	3327 C5	3A19 D5	3H52 E7	3I86 A4	3P31 C9	5711 E4	6I58 A2	7D59 A1	9A08 D5	
2013 B3	2765 E4	2AN5 E5	2I10 A7	2P73 C7	2U26 F4	3328 C5	3A30 D6	3H53 E8	3I87 A4	3P32 C9	5712 E4	6I59 A2	7E15 E1	9A09 D5	
2017 B5	2766 E4	2AN6 E5	2I11 A7	2P74 C7	2U27 E2	3331 C5	3A35 D6	3H54 E7	3I88 A4	3P33 C8	5713 D4	6I60 A2	7E18 E1	9C02 A3	
2019 B4	2768 B2	2AN8 E6	2I12 A7	2P75 C7	2U28 F2	3333 C5	3A38 D6	3H55 E8	3I89 A2	3P36 C9	5715 D3	6I61 A2	7E24 E1	9D49 B1	
2022 C4	2769 E3	2C00 B4	2I13 A7	2P76 C8	2U33 F4	3334 C5	3A45 D5	3H56 E8	3I90 A2	3P37 C8	5717 D2	6I62 A2	7H50 E8	9D50 B1	
2023 B4	2773 E3	2C02 B5	2I14 A7	2P77 C7	2U35 F4	3337 C5	3A46 D5	3H57 E8	3I91 A2	3P38 C8	5720 E4	6I63 A3	7H51 D8	9D51 B1	
2024 C4	2775 E3	2D15 E2	2I15 A7	2P78 C7	2V06 D1	3338 C6	3A47 D5	3H59 E7	3I92 A2	3P39 C8	5726 C3	6I64 A2	7H52 D8	9D52 B1	
2026 B4	2777 E3	2D22 D1	2I16 A5	2P79 C7	2V07 D2	3339 D5	3A48 D5	3H60 E7	3I96 A2	3P40 C8	5739 C3	6I65 A2	7H53 E8	9D53 B1	
2033 B4	2778 E3	2D50 B1	2I17 A5	2P82 D7	2V08 D2	3350 C6	3A49 D5	3H62 E8	3I97 A2	3P45 C8	5740 B3	6I66 A3	7H72 E8	9D55 A1	
2036 B4	2779 E3	2D51 A1	2I18 A5	2P83 D7	2V09 D1	3351 C6	3A51 D5	3H63 E8	3I98 A6	3P46 C8	5741 B3	6I67 A2	7H73 E8	9E53 C1	
2038 B4	2781 E3	2D52 A1	2I19 A5	2P84 D7	2V10 D1	3352 C6	3A52 D5	3H64 E9	3IA0 A2	3P47 D9	5755 E4	6I68 A3	7H74 E8	9E54 D1	
2040 C4	2784 D2	2D53 A1	2I20 A5	2P85 D7	2V14 D1	3354 D6	3A53 D5	3H65 E8	3IA1 A6	3P48 C8	5760 D4	6I69 A2	7H75 E8	9I00 B7	
2041 C5	2785 D2	2D54 A1	2I21 A5	2P87 C8	2V15 D1	3355 D6	3A55 D5	3H66 E9	3IA2 A2	3P50 C8	5761 D4	6I70 A2	7H95 E8	9I01 B7	
2052 B3	2786 D2	2D55 A1	2I22 A5	2P88 C8	2V16 D1	3356 C6	3A56 D5	3H67 E8	3IA3 A2	3P51 C8	5762 D4	6I73 A8	7H98 E7	9I02 B7	
2053 B3	2787 D3	2D57 A1	2I23 A5	2P91 D9	2V17 D1	3357 C6	3A72 E7	3H71 E9	3IB1 A6	3P52 C7	5A04 E6	6I74 A8	7I00 B7	9I03 B7	
2054 B3	2788 D3	2D58 A1	2I24 A5	2P92 D9	2V18 D1	3358 C5	3A73 E6	3H72 E8	3IB2 A5	3P53 C8	5A05 E6	6I90 A3	7I05 A6	9I04 B7	
2055 B3	2789 D3	2D59 A1	2I25 A5	2P93 C9	2V19 D1	3359 C6	3A75 E6	3H73 E9	3IB4 A8	3P54 C7	5A10 E5	6I91 A3	7I06 B7	9I07 A2	
2056 B3	2795 C3	2D60 A1	2I26 A2	2P94 C9	2V20 D2	3360 D6	3A76 E6	3H74 E8	3IB5 A8	3P55 D7	5A11 E5	6I92 A3	7I07 A8	9I09 A7	
2057 B3	2799 D2	2D62 A1	2I27 A2	2P95 D8	2V21 D2	3362 C6	3A77 E7	3H77 E8	3IB7 A8	3P56 C7	5A12 E5	6I93 A3	7I09 A8	9I11 A7	
2060 B3	2800 D2	2D66 A1	2I29 A2	2P96 D8	2V22 D1	3364 C6	3A78 E7	3H78 E8	3IB9 A6	3P57 D7	5A13 E5	6I94 A3	7I20 B8	9I13 A8	
2061 B3	2801 D2	2D67 A1	2I30 A2	2P97 C7	2V23 D1	3365 C6	3A84 F7	3H79 E8	3IC1 A8	3P58 C7	5A14 E5	6I95 A3	7I22 B8	9I15 A5	
2063 C4	2802 D2	2D68 A1	2I31 A2	2PA0 D7	2Y03 F5	3366 C5	3AA2 E6	3H82 E8	3IC2 A5	3P59 C7	5A15 E5	6I96 A3	7I23 A8	9I16 A8	
2068 C4	2810 C2	2D69 A1	2I33 A3	2PA1 D7	2Y04 F5	3367 C5	3C00 B5	3H86 E8	3IC3 A5	3P60 C7	5A20 E6	6I97 A3	7I25 A6	9I20 A5	
2072 C4	2812 C3	2D70 A1	2I34 A2	2PA2 C7	2Y05 F5	3368 C5	3C04 B5	3H87 E8	3IC4 A5	3P62 D7	5A21 D6	6I98 A3	7I28 A5	9I21 B7	
2074 C4	2815 C3	2D72 A1	2I35 A2	2PA3 C7	2Y06 F5	3369 C5	3C05 B5	3H88 E7	3IC6 A5	3P63 D7	5A31 D6	6I99 A3	7I29 A5	9I25 A6	
2302 B6	2816 B3	2D73 A1	2I36 A2	2PA9 C7	2Y07 F5	3378 B5	3C10 B5	3H89 E8	3IC7 A8	3P64 D7	5A32 D6	6IA5 A8	7I32 A3	9I48 A8	
2303 C6	2818 B3	2D75 A1	2I38 A8	2PB0 D7	2Y08 F5	3380 B5	3C11 C4	3H90 E8	3IC8 A8	3P65 C7	5A33 D6	6IA6 A8	7I44 A5	9I57 B8	
2304 C5	2819 D2	2D80 A1	2I39 A6	2PB1 C7	2Y09 F5	3382 B6	3D39 B1	3H91 E8	3ID0 A8	3P66 C7	5A64 E6	6IA7 A6	7I50 B7	9I58 A8	
2306 C6	2820 C2	2D81 B1	2I43 A8	2PB2 C7	2Y10 F5	3383 C6	3D41 A1	3H97 E8	3IE2 A3	3P67 C7	5A65 E6	6IA8 A8	7P01 C8	9I59 B8	
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2309 C5	2824 E4	2D92 B1	2I47 A6	2PF2 C7	3001 C4	3386 C6	3D44 A1	3HC1 D8	3IE8 A3	3P70 B7	5D52 A1	6PB1 C7	7P06 C8	9I81 A5	
2310 C5	2826 C3	2D93 B1	2I57 A3	2PF5 C7	3002 C4	3389 C6	3D45 A1	3HC2 D8	3IE9 A3	3P72 C7	5D53 A1	6PB5 D7	7P07 C8	9I82 A6	
2311 C5	2827 C3	2E19 E1	2I58 A3	2PF6 C7	3004 B4	3391 C6	3D46 A1	3HC3 E8	3IF0 A3	3P74 C7	5D54 A1	6PB6 D7	7P11 D9	9I85 A3	
2312 C5	2828 C3	2E20 E1	2I79 A7	2PF7 D7	3005 C4	3392 B5	3D47 A1	3HC4 D8	3IF5 A3	3P75 C7	5E01 E1	6PB7 D7	7P51 C7	9I87 A4	
2313 C5	2830 B3	2E21 D1	2I92 A8	2S01 B6	3006 C3	3401 B5	3D48 A1	3HC5 D8	3IF6 A3	3P76 C7	5E02 D1	6PB9 D7	7P52 C7	9I88 A3	
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2325 C5	2836 D4	2E33 E1	2IA2 A7	2S09 D6	3014 B5	3410 B5	3D55 A1	3HD1 D7	3IH8 A8	3P85 C7	5E51 D1	6T06 A9	7PB5 C7	9I98 A7	
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2342 D6	2850 D4	2E44 D1	2IC1 A2	2S16 D6	3029 B4	3434 B5	3D62 A1	3HD8 E8	3II5 A8	3PD7 C7	5P10 D8	6U14 F4	9000 B7	9IB2 A7	
2343 C6	2851 B2	2E45 D1	2IC3 A3	2S17 C6	3030 C4	3435 B5	3D63 A1	3HD9 E8	3II6 A8	3PF5 B7	5P11 C9	6U15 F4	9001 C5	9IB3 A2	
2345 B5	2852 D3	2E55 D1	2IC4 A5	2S18 C6	3031 C4	3441 B5	3D64 B1	3HH3 D8	3II7 A8	3PG1 C7	5P50 C7	6V01 D1	9002 C4	9IC4 A3	
2346 B4	2853 B3	2E56 C1	2IC5 A7	2S19 C6	3032 C4	3445 B6	3D67 A1	3I03 B7	3IJ2 A8	3PH1 C7	5PA9 C7	6V02 D2	9003 C4	9L03 B1	
2354 C6	2854 B3	2E57 D1	2IC6 A7	2S20 C6	3034 B4	3450 B6	3D68 A1	3I13 B7	3IJ3 A8	3PH5 D7	5S02 D6	6V03 D1	9004 C4	9L04 B1	
2366 B6	2856 D4	2E59 D1	2IC9 A4	2S21 C6	3036 C4	3451 B6	3D69 B1	3I14 B7	3IJ4 A8	3PH6 D7	5S03 D6	7002 B5	9005 A3	9P04 C8	
2369 C6	2857 B3	2E60 D1	2IF1 A8	2S22 C6	3037 C4	3452 B6	3D70 A1	3I19 B7	3IK1 B7	3PH7 D7	5S04 B6	7003 B5	9006 A3	9P05 C8	
2370 C6	2864 B2	2E63 D1	2IH0 B8	2S23 B6	3040 B5	3453 D5	3D73 A1	3I20 B7	3IK2 A5	3PH9 D7	5S05 C6	7004 C4	9007 B3	9P07 C8	
2371 B5	2865 B3	2E65 D1	2IH1 B8	2S25 C6	3041 C5	3454 D5	3D79 A1	3I26 B7	3IK3 A5	3S02 E9	5S06 E9	7007 B4	9008 C4	9P09 C9	
2372 B5	2875 E4	2E67 D1	2IH2 B8	2S26 C6	3042 C4	3455 D5	3D83 A1	3I27 B7	3IK4 A7	3S03 E9	5S07 E9	7011 C4	9009 C4	9P10 C8	
2374 C6	2876 E4	2E68 D1	2IH3 A5	2S27 B6	3045 B3	3456 B5	3D87 A1	3I34 A7	3IK5 B7	3S04 F6	5S08 E9	7012 C4	9010 C4	9P11 C8	
2375 B6	2885 B3	2E71 C1	2IJ0 B7	2S28 B6	3046 B3	3457 B5	3D88 A1	3I35 A7	3IK7 B8	3S05 E6	5T03 A9	7015 C5	9011 C4	9P12 C9	
2378 B5	2899 D2	2E73 D1	2IJ1 A7	2S29 B6	3048 B4	3459 C6	3D89 A1	3I36 A7	3IK9 A6	3S06 D6	5V06 D1	7016 C4	9012 C4	9P16 C8	
2384 B6	2A01 D6	2E76 D1	2IJ2 B7	2S30 C6	3049 C4	3463 B5	3D90 A1	3I37 A7	3IL7 A5	3S07 D6	5V07 D1	7020 C4	9013 C4	9P17 C8	
2385 C6	2A05 D5	2E77 D1	2IJ3 B7	2S31 C6	3050 B4	3465 C6	3D91 A1	3I38 A7	3IL8 A5	3S11 E9	5V08 D1	7021 C4	9014 C5	9P18 C8	
2386 C6	2A07 D6	2E78 C1	2IK0 A3	2S32 C6	3051 B4	3467 D6	3D92 A1	3I39 A7	3IL9 A5	3S12 E9	6002 B3	7301 C5	9015 C4	9P20 C8	
2387 B6	2A19 D6	2E80 D1	2L01 B1	2S33 C6	3052 B4	3468 C6	3D93 A1	3I40 A6	3IM0 A5	3S13 E9	6004 C4	7302 C5	9019 C4	9P21 C8	
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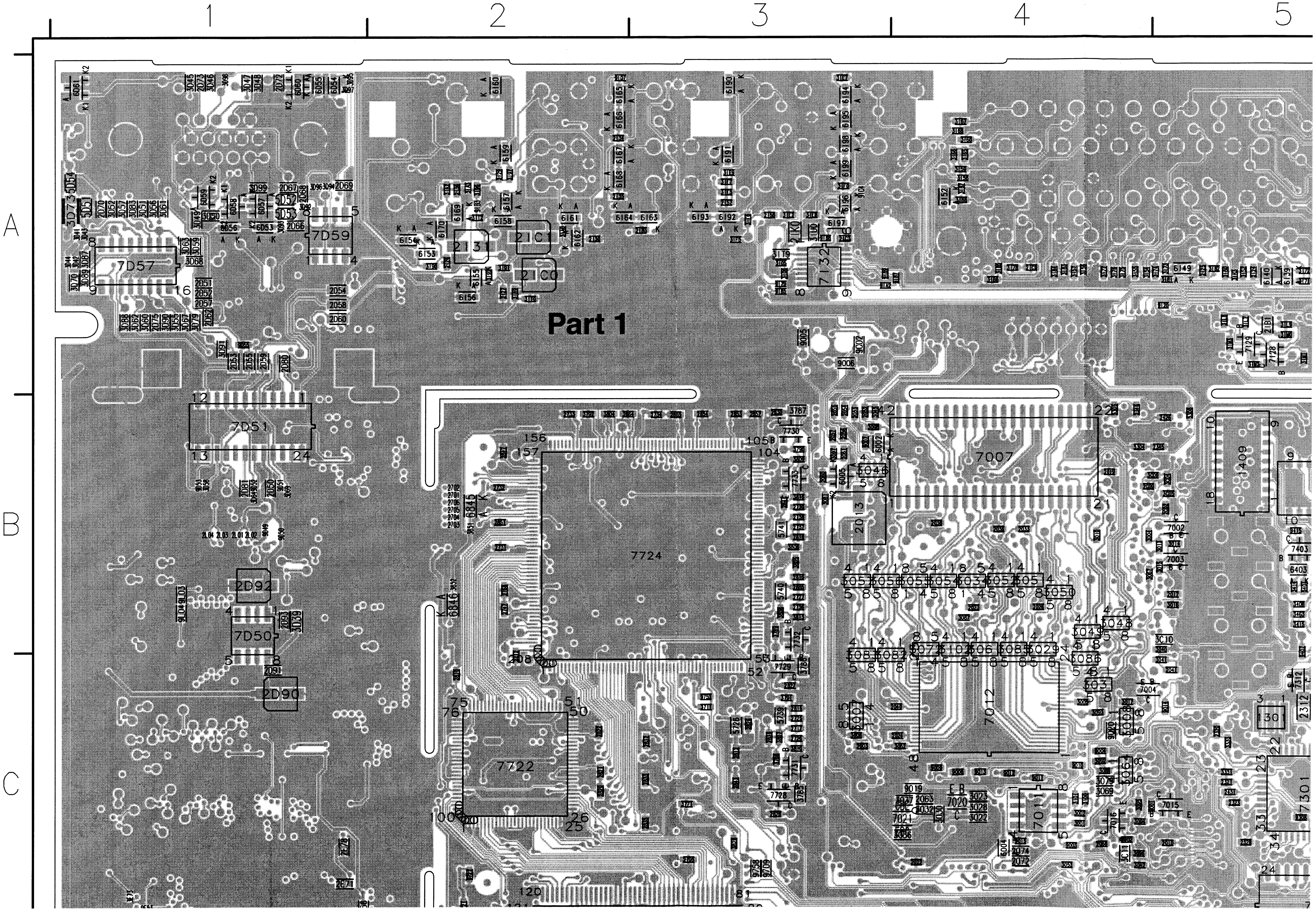
2402 B6	2A34 E6	2E82 E1	2L03 B1	2S35 C6	3054 B4	3471 D6	3D95 A1	3I42 A7	3IM2 A5	3S18 E9	6303 C6	7305 D6	9300 B5	9P23 C8	
2418 B5	2A38 E6	2H11 D7	2L04 B1	2S36 C6	3055 B4	3701 D3	3D96 A1	3I43 A7	3IM3 A5	3S19 E9	6304 C6	7306 C6	9308 C5	9P24 C9	
2419 B5	2A64 D5	2H12 D7	2P01 C8	2S37 C6	3056 B3	3709 E4	3D97 A1	3I44 A7	3IN2 A5	3T03 A9	6306 C5	7307 C6	9309 C5	9P25 C9	
2420 C6	2A69 D6	2H13 D8	2P09 C8	2S38 C6	3057 B3	3710 E4	3D98 A1	3I45 A7	3IN3 A5	3T04 B9	6307 C5	7309 C6	9310 C5	9P28 C8	
2421 B6	2A70 D6	2H14 E8	2P11 C9	2S39 C6	3061 B4	3711 C3	3D99 A1	3I46 A7	3IN5 A5	3U12 F4	6308 D5	7310 C6	9311 C5	9P30 C8	
2422 B6	2A72 E6	2H15 E8	2P12 C9	2S40 C6	3062 C4	3712 D4	3E04 E1	3I47 A7	3IN6 A5	3U24 F4	6312 C5	7312 B5	9312 C5	9P52 C7	
2423 B6	2A74 E6	2H16 E8	2P14 C9	2S41 C6	3064 C4	3722 D5	3E07 D1	3I48 A6	3IN8 B7	3U27 F4	6313 C6	7313 D6	9313 C6	9P53 C7	
2424 C6	2A79 D5	2H17 D8	2P15 C9	2S42 B6	3067 B4	3723 D3	3E09 E1	3I49 A6	3IN9 B7	3U32 E2	6314 C6	7314 D6	9318 C6	9P54 D7	
2426 B5	2A80 D5	2H19 D8	2P16 C9	2S43 B6	3069 C4	3724 D4	3E10 E1	3I50 A5	3IO5 A3	3U33 F3	6317 C6	7315 D6	9319 C6	9P55 C8	
2431 C5	2A81 D5	2H20 D8	2P18 C8	2S44 C6	3072 B4	3731 D4	3E11 D1	3I51 A5	3IO6 A3	3U35 F4	6334 C5	7316 C6	9401 B5	9P56 C8	
2701 B2	2A83 D6	2H22 D9	2P23 D8	2S45 B6	3079 C4	3732 D4	3E12 D1	3I52 A5	3IP8 A7	3U36 F4	6402 B5	7317 C6	9402 B5	9P57 C8	
2702 B2	2A84 E5	2H23 D8	2P24 C8	2S46 B6	3081 B3	3733 D4	3E13 E1	3I53 A5	3IR0 B8	3U37 F4	6403 B5	7318 C6	9403 B5	9P58 C8	
2703 B2	2A85 E5	2H24 E7	2P25 C9	2S47 E9	3082 C4	3758 E4	3E14 E1	3I54 A4	3IR1 B8	3U38 F4	6405 B5	7319 C6	9405 B5	9P59 C9	
2704 B2	2A86 E5	2H36 E9	2P29 C8	2S48 E9	3083 C3	3759 D4	3E15 E1	3I55 A4	3IR2 B8	3U39 F4	6831 D4	7322 B6	9406 B6	9P60 C8	
2705 B2	2A88 D6	2H37 E9	2P30 C8	2S49 E9	3085 B4	3764 E4	3E16 E1	3I56 A4	3IR3 B8	3U40 F4	6835 E2	7375 C6	9407 B5	9P63 C7	
2706 B2	2A89 D5	2H39 E9	2P31 D9	2S50 E9	3086 C4	3765 E4	3E17 E1	3I57 A4	3IR4 B8	3U41 F4	6837 E3	7401 B5	9410 C5	9P64 C7	
2712 C2	2A90 D5	2H41 E8	2P32 D8	2S51 E9	3087 B4	3766 E2	3E18 E1	3I58 A4	3IR6 B8	3U42 F4	6845 B2	7403 B5	9413 B6	9P65 C8	
2713 E4	2A91 D5	2H47 E8	2P33 D9	2S52 E9	3088 C4	3767 E3	3E22 D1	3I59 A4	3IR7 B8	3U43 F4	6846 B2	7406 B5	9415 B5	9P69 C7	
2714 E5	2A92 D5	2H50 E8	2P43 D8	2S53 E9	3092 C4	3770 D3	3E23 D1	3I60 A4	3IR8 B7	3U44 F2	6A01 D6	7407 B5	9418 B6	9P71 C7	
2717 C3	2A93 E6	2H61 E8	2P45 D8	2S54 E9	3093 C4	3771 C3	3E24 D1	3I61 A5	3IS2 A5	3U45 F2	6A02 D6	7410 B6	9420 B6	9S40 D6	
2725 C3	2A94 E5	2H62 E8	2P46 D8	2S55 E9	3094 C4	3785 C3	3E45 E1	3I62 A5	3IS3 A7	3U54 F4	6D53 A1	7412 B6	9421 D6	9S41 D6	
2726 C3	2A96 E5	2H63 E8	2P47 D8	2T01 A8	3095 C4	3786 C3	3E50 E1	3I63 A5	3IS4 A7	3U55 F4	6D54 A1	7712 E4	9701 E4	9S43 F6	
2727 B3	2A97 E5	2H64 E8	2P49 C8	2T02 A9	3096 C4	3787 B3	3E51 E1	3I64 A5	3IS5 A7	3V03 D1	6D55 A1	7713 D3	9702 E4	9S65 B6	
2728 E2	2A98 E5	2H65 E8	2P51 C8	2T03 B8	3097 B3	3788 C3	3E52 D1	3I65 A4	3IS6 A7	3V04 D1	6D56 A1	7714 E3	9709 C3	9S66 E6	

E_13450_002m.eps
201204

Personal Notes:

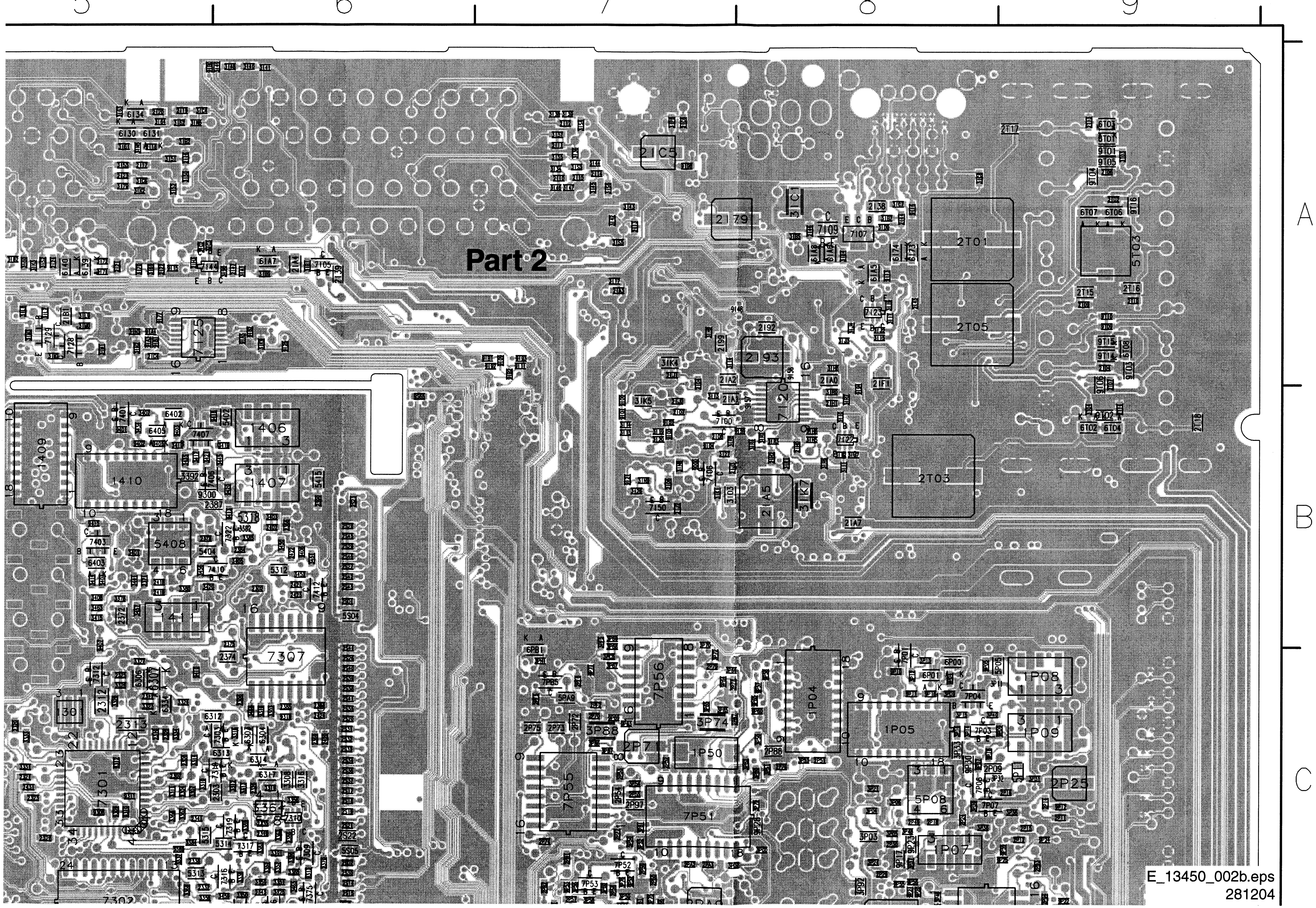
E_06532_012.eps
131004

Layout Small Signal Panel (AB) (Bottom Side Part 1)


1
2
3
4
5
A
B
C
Part 1
7D57
7D59
7D51
7D50
2D92
2D90
2131
21C1
21C0
7132
7724
7722
7007
7012
7011
1409
7301
2013
6845
6846

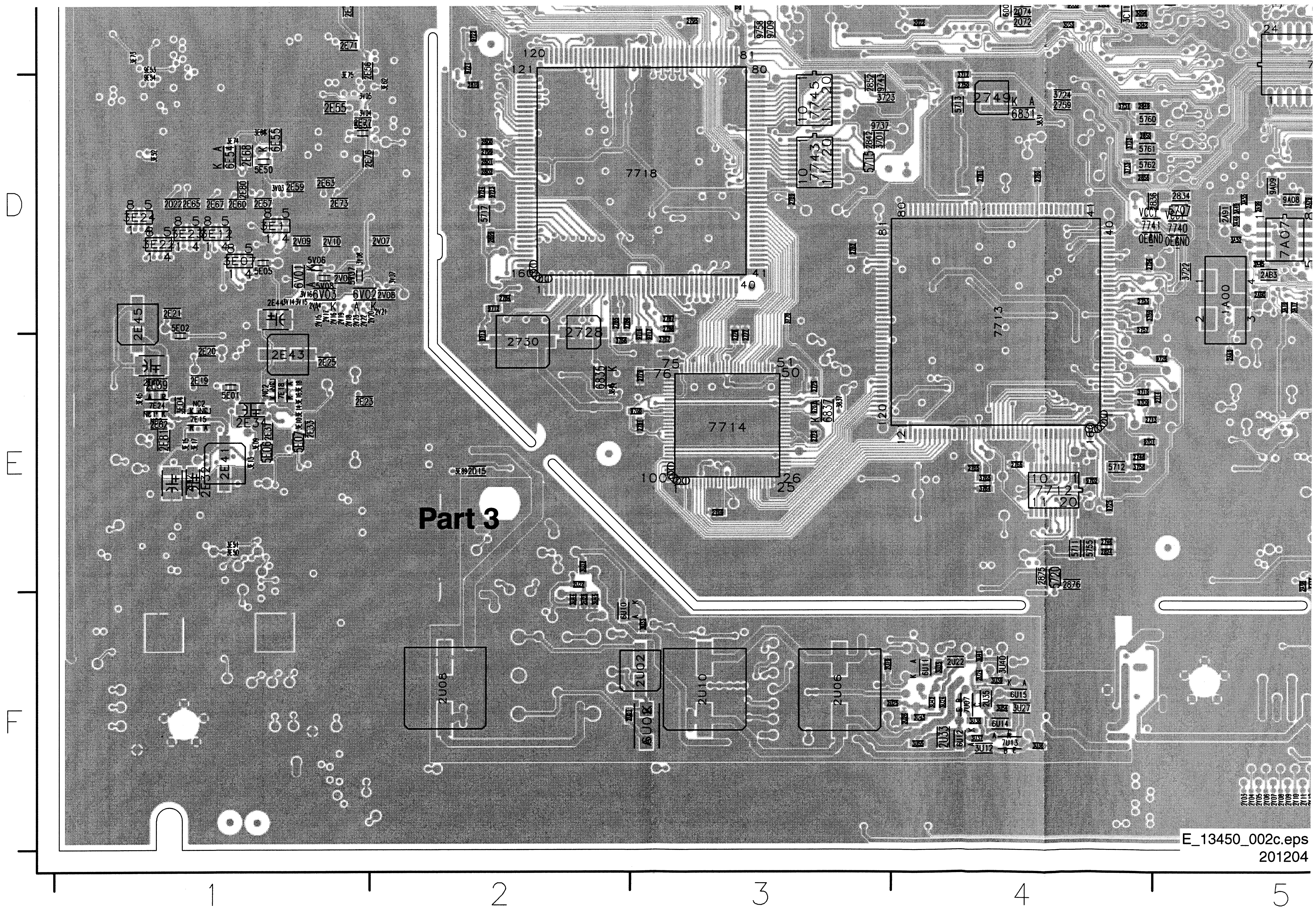
E_13450_002a.eps
201204

Layout Small Signal Panel (AB) (Bottom Side Part 2)


5
6
7
8
9
A
B
C
Part 2
21C5
2179
31C1
7109
7107
2T01
5T03
2T05
2T03
2192
2193
7120
21A5
31K7
7150
31K4
31K5
1406
1407
1409
1410
5408
1411
7307
7301
7302
1301
2313
7144
6147
7105
7125
7P56
7P55
7P51
1P50
3P74
3P88
2P71
1P04
1P05
1P08
1P09
2P25
5P08
1P07

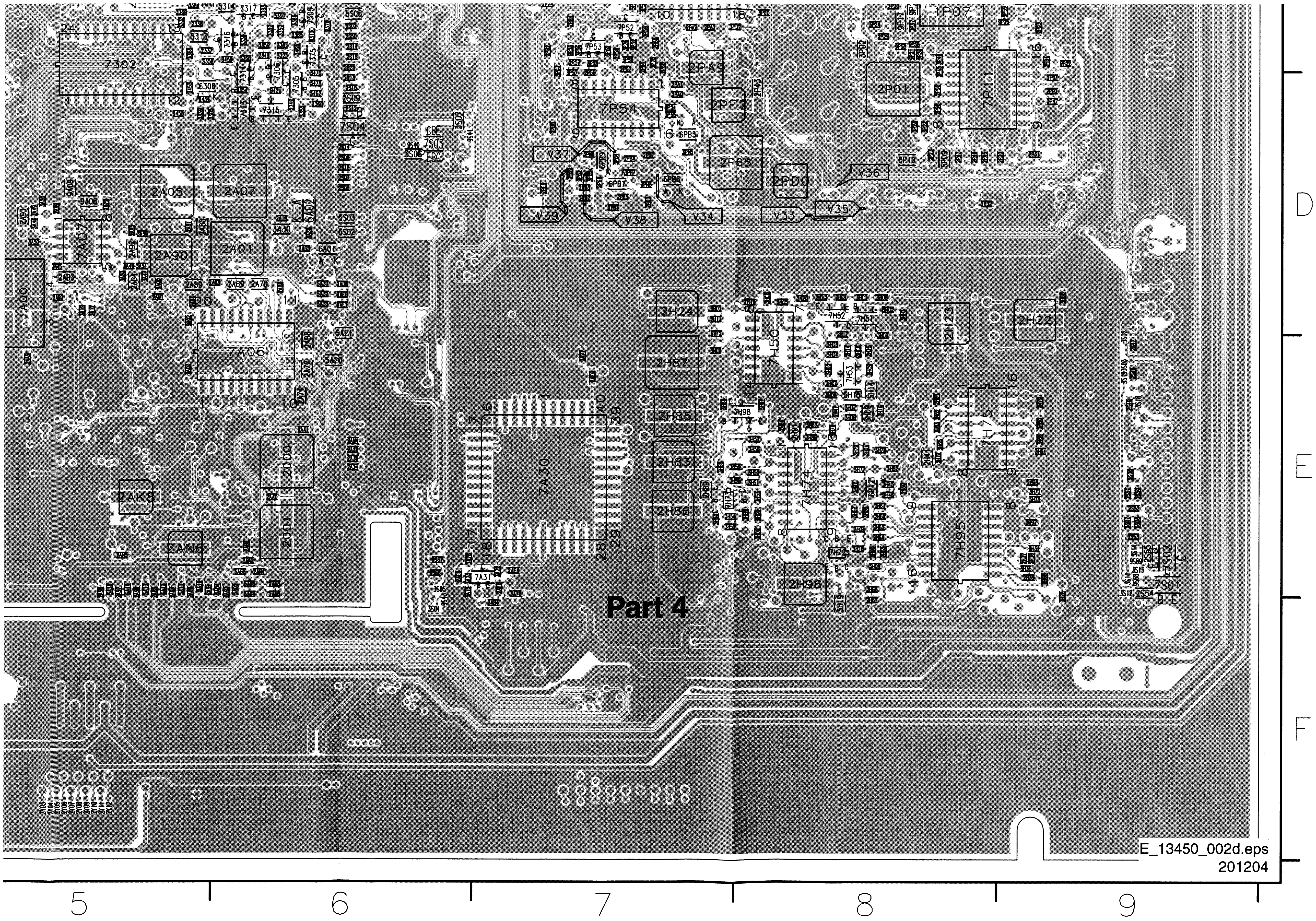
E_13450_002b.eps
281204

Layout Small Signal Panel (AB) (Bottom Side Part 3)


Part 3
7718
7713
7714
2730
2728
7745
7743
7712
2749
6831
1A00
7A07
2U08
2U02
2U10
2U06
2E45
2E43
2E41
2E55
2E57
2E71
2E73
2E63
D
E
F
1
2
3
4
5

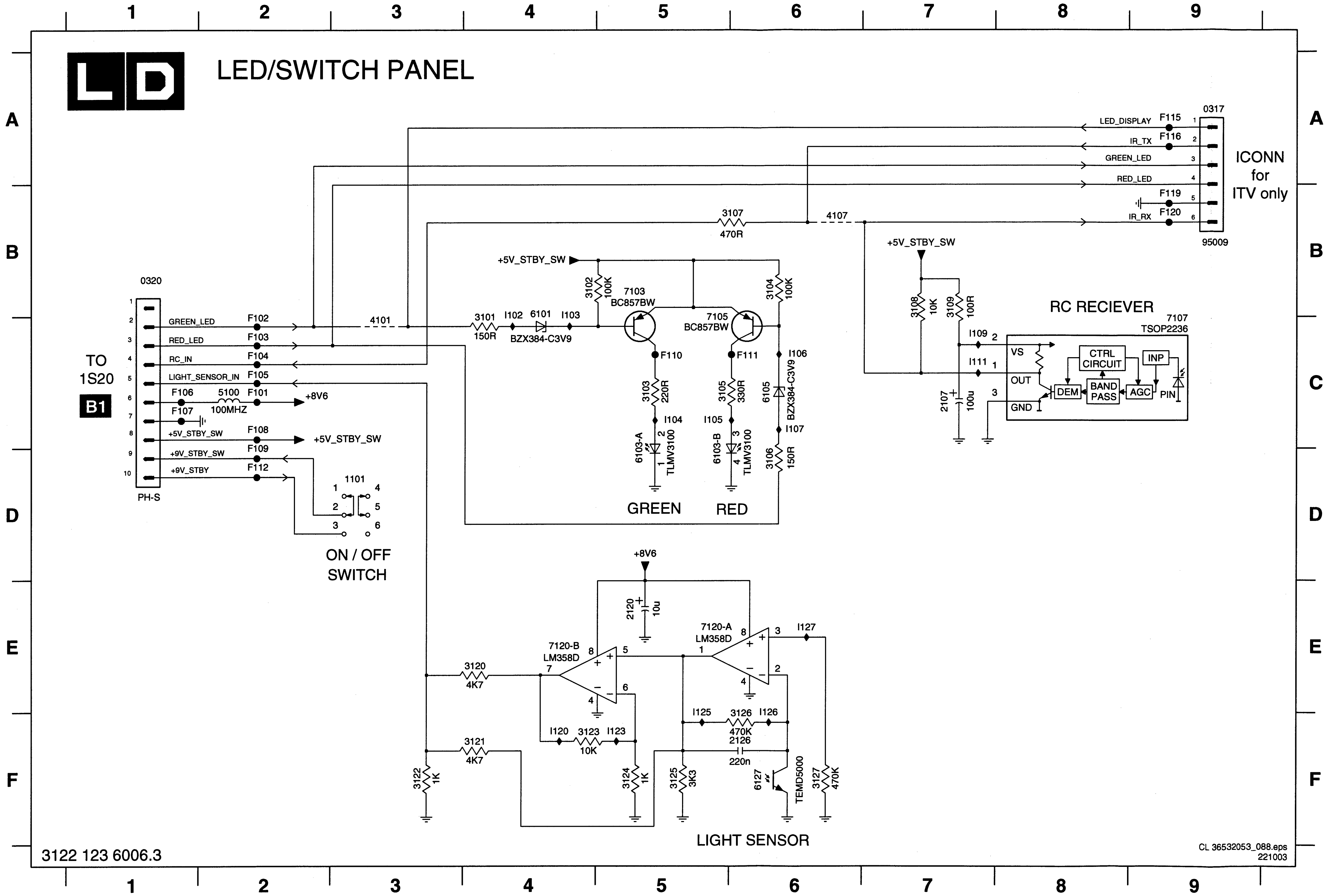
E_13450_002c.eps
201204

Layout Small Signal Panel (AB) (Bottom Side Part 4)


7302
7A07
7A06
2A05
2A07
2A90
2A01
1A00
2000
2001
2AK8
2AN6
7A30
7A31
7P54
7P53
7P52
2PA9
2PF7
2P65
2PD0
2P01
7P11
1P07
V33
V34
V35
V36
V37
V38
V39
2H24
2H87
2H85
2H83
2H86
2H96
7H50
7H74
7H75
7H95
2H23
2H22
7S01
7S02
7S03
7S04
Part 4
D
E
F
5
6
7
8
9

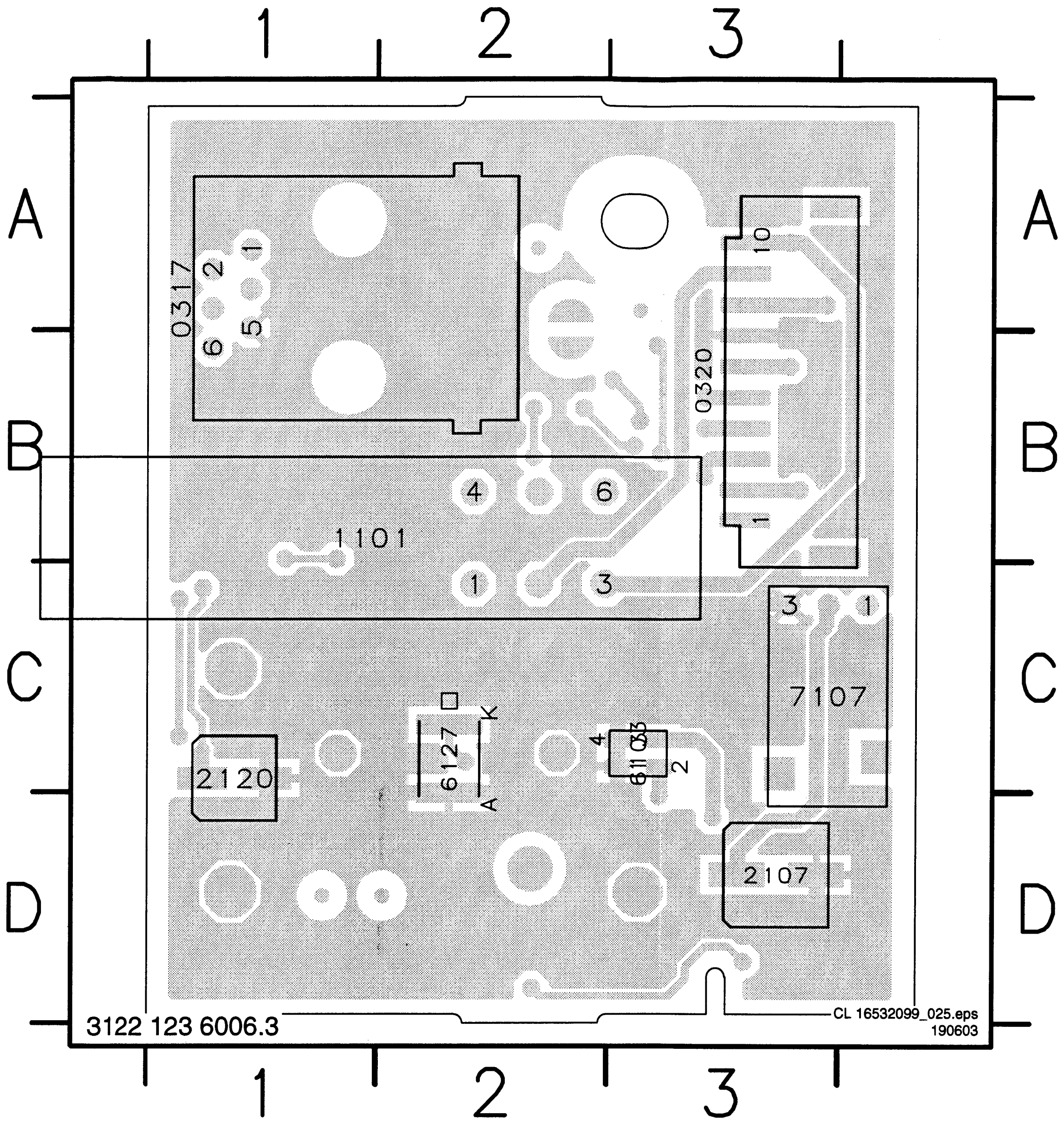
E_13450_002d.eps
201204

LED/Switch Panel


LD
LED/SWITCH PANEL
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
0320
TO
1S20
B1
GREEN_LED
RED_LED
RC_IN
LIGHT_SENSOR_IN
F102
F103
F104
F105
F106
5100
100MHZ
F101
+8V6
F107
+5V_STBY_SW
F108
+5V_STBY_SW
+9V_STBY_SW
F109
+9V_STBY
F112
PH-S
1101
ON / OFF
SWITCH
4101
3101
150R
I102
6101
BZX384-C3V9
I103
+5V_STBY_SW
3102
100K
7103
BC857BW
7105
BC857BW
3104
100K
F110
F111
3103
220R
3105
330R
I104
I105
6103-A
TLMV3100
6103-B
TLMV3100
GREEN
RED
I106
6105
BZX384-C3V9
I107
3106
150R
3107
470R
4107
LED_DISPLAY
IR_TX
GREEN_LED
RED_LED
IR_RX
F115
F116
F119
F120
0317
95009
ICONN
for
ITV only
+5V_STBY_SW
3108
10K
3109
100R
RC RECIEVER
7107
TSOP2236
I109
I111
2107
100u
VS
OUT
GND
CTRL
CIRCUIT
INP
DEM
BAND
PASS
AGC
PIN
+8V6
2120
10u
7120-B
LM358D
7120-A
LM358D
I127
3120
4K7
3121
4K7
I120
3123
10K
I123
I125
3126
470K
I126
2126
220n
3122
1K
3124
1K
3125
3K3
6127
TEMD5000
3127
470K
LIGHT SENSOR
3122 123 6006.3
CL 36532053_088.eps
221003

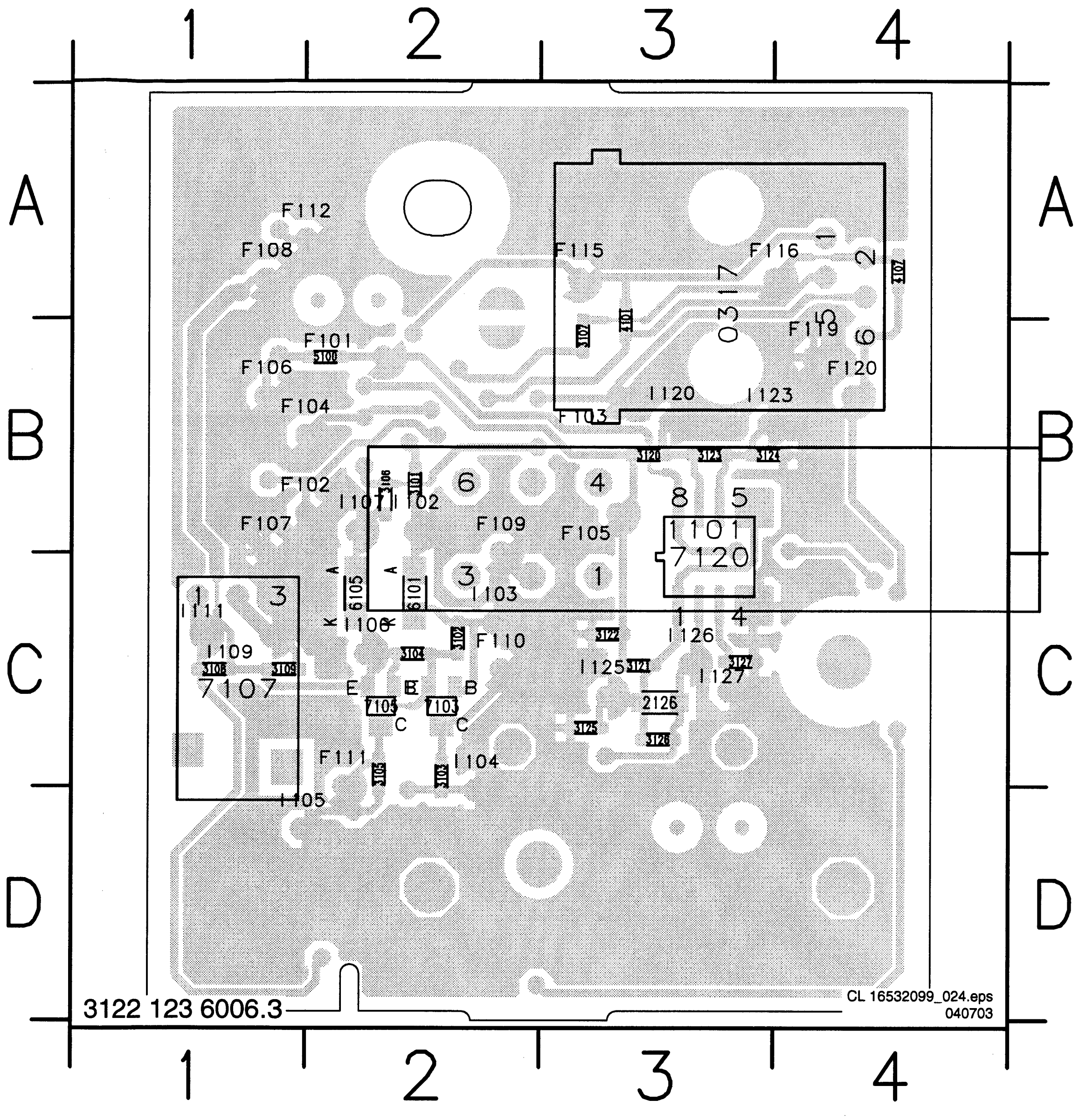
0317	A9
0320	B1
1101	D3
2107	C7
2120	E5
2126	F6
3100	C2
3101	C4
3102	B4
3103	C5
3104	B6
3105	C5
3106	D6
3107	B6
3108	B7
3109	B7
3120	E4
3121	F4
3122	F3
3123	F4
3124	F5
3125	F5
3126	F6
3127	F6
4101	C3
4107	B6
6101	C4
6103-A	C5
6103-B	D5
6105	C6
6127	F6
7103	B5
7105	B5
7107	C9
7120-A	E6
7120-B	E4
F101	C2
F102	C2
F103	C2
F104	C2
F105	C2
F106	C1
F107	C1
F108	C2
F109	D2
F110	C5
F111	C6
F112	D2
F115	A9
F116	A9
F119	B9
F120	B9
I102	B4
I103	B4
I104	C5
I105	C5
I106	C6
I107	C6
I109	C7
I111	C7
I120	F4
I123	F5
I125	E5
I126	E6
I127	E6

Layout LED/Switch Panel (Top Side)


1
2
3
A
B
C
D
0317
0320
1101
7107
2120
6127
6103
2107
3122 123 6006.3
CL 16532099_025.eps
190603

0317	A1
0320	B3
1101	B1
2107	D3
2120	C1
6103	C3
6127	C2
7107	C3

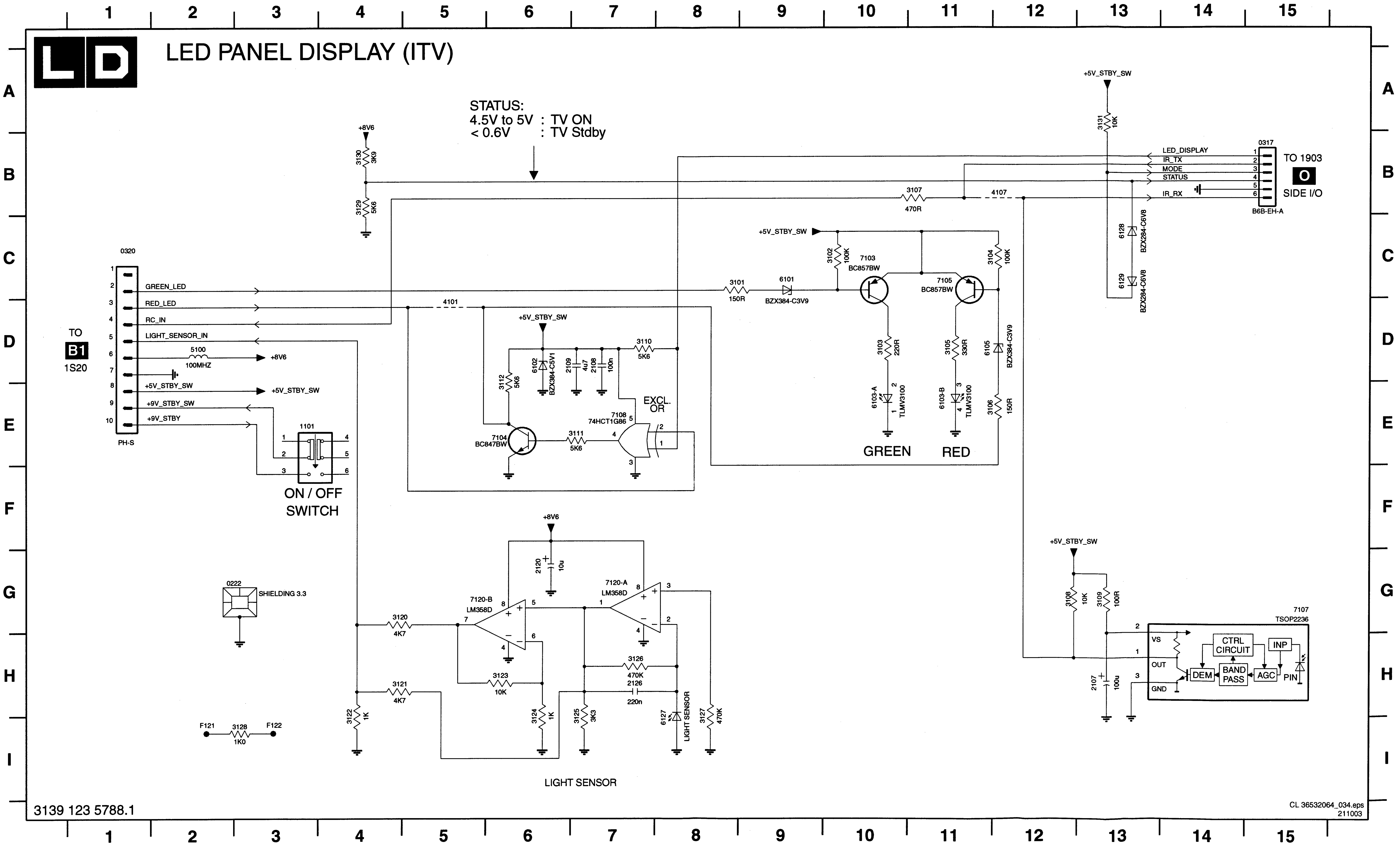
Layout LED/Switch Panel (Bottom Side)


1
2
3
4
A
B
C
D
F112
F108
F101
F106
F104
F102
F107
F115
F116
0317
F119
F120
F103
1120
1123
1101
7120
1107
1102
F109
F105
1103
1106
F110
1126
1125
1127
2126
1111
1109
7107
7105
7103
F111
1104
1105
3122 123 6006.3
CL 16532099_024.eps
040703

0317	A4
1101	B3
2126	C3
3101	B2
3102	C2
3103	C2
3104	C2
3105	C2
3106	B2
3107	B3
3108	C1
3109	C1
3120	B3
3121	C3
3122	C3
3123	B3
3124	B3
3125	C3
3126	C3
3127	C3
4101	B3
4107	A4
5100	B2
6101	C2
6105	C2
7103	C2
7105	C2
7107	C1
7120	C3

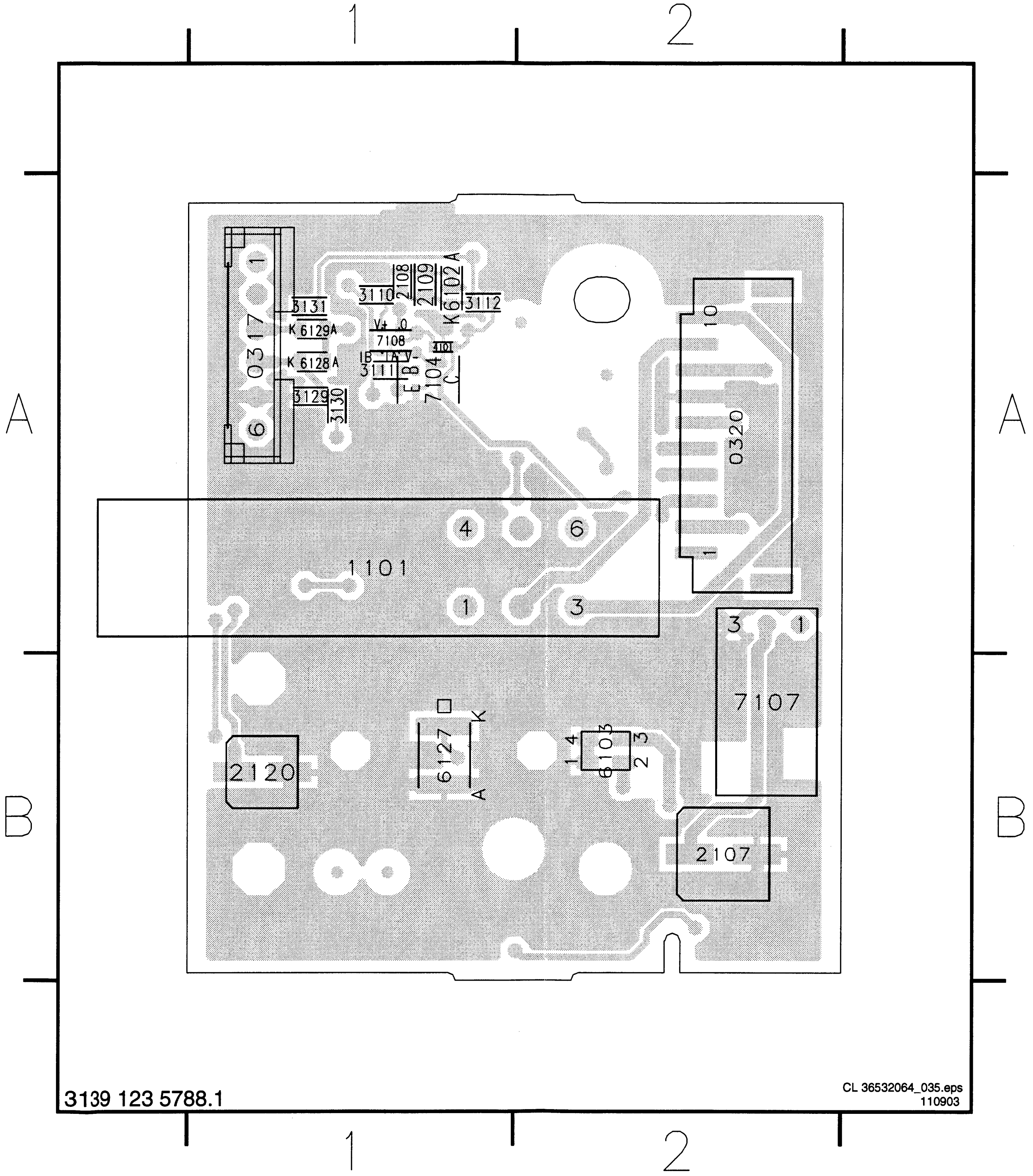
LED/Switch Panel (ITV)

0222 G2
0317 B15
0320 C1
1101 E3
2107 H13
2108 D7
2109 D6
2120 G6
2126 H7
3101 C8
3102 C10
3103 D10
3104 C11
3105 D11
3106 E11
3107 B11
3108 G12
3109 G13
3110 D7
3111 E7
3112 E6
3120 G4
3121 H4
3122 I4
3123 H6
3124 I6
3125 I7
3126 H7
3127 I8
3128 I3
3129 B4
3130 B4
3131 A13
4101 D5
4107 B12
5100 D2
6101 C9
6102 D6
6103-A E10
6103-B E11
6105 D11
6127 I8
6128 C13
6129 C13
7103 C10
7104 E6
7105 C11
7107 G15
7108 E7
7120-A G7
7120-B G6


LD
LED PANEL DISPLAY (ITV)
STATUS:
4.5V to 5V : TV ON
< 0.6V : TV Stdby
+8V6
3130 3K9
3129 5K6
3107 470R
4107
+5V_STBY_SW
3131 10K
LED_DISPLAY
IR_TX
MODE
STATUS
IR_RX
0317
B6B-EH-A
TO 1903
O
SIDE I/O
6128 BZX284-C6V8
6129 BZX284-C6V8
0320
GREEN_LED
RED_LED
RC_IN
LIGHT_SENSOR_IN
5100 100MHZ
+8V6
+5V_STBY_SW
+9V_STBY_SW
+9V_STBY
PH-S
TO
B1
1S20
1101
ON / OFF
SWITCH
4101
3101 150R
6101 BZX384-C3V9
3102 100K
7103 BC857BW
7105 BC857BW
3104 100K
3103 220R
3105 330R
6105 BZX384-C3V9
3106 150R
6103-A TLMV3100
6103-B TLMV3100
GREEN
RED
6102 BZX384-C5V1
2109 4u7
2108 100n
3110 5K6
3112 5K6
EXCL. OR
7108 74HCT1G86
7104 BC847BW
3111 5K6
+8V6
2120 10u
7120-B LM358D
7120-A LM358D
3120 4K7
3121 4K7
3122 1K
3123 10K
3124 1K
3125 3K3
3126 470K
2126 220n
6127 LIGHT SENSOR
3127 470K
LIGHT SENSOR
0222 SHIELDING 3.3
F121 3128 1K0 F122
+5V_STBY_SW
3108 10K
3109 100R
2107 100u
7107 TSOP2236
VS
OUT
GND
CTRL CIRCUIT
INP
DEM
BAND PASS
AGC
PIN
3139 123 5788.1
CL 36532064_034.eps 211003

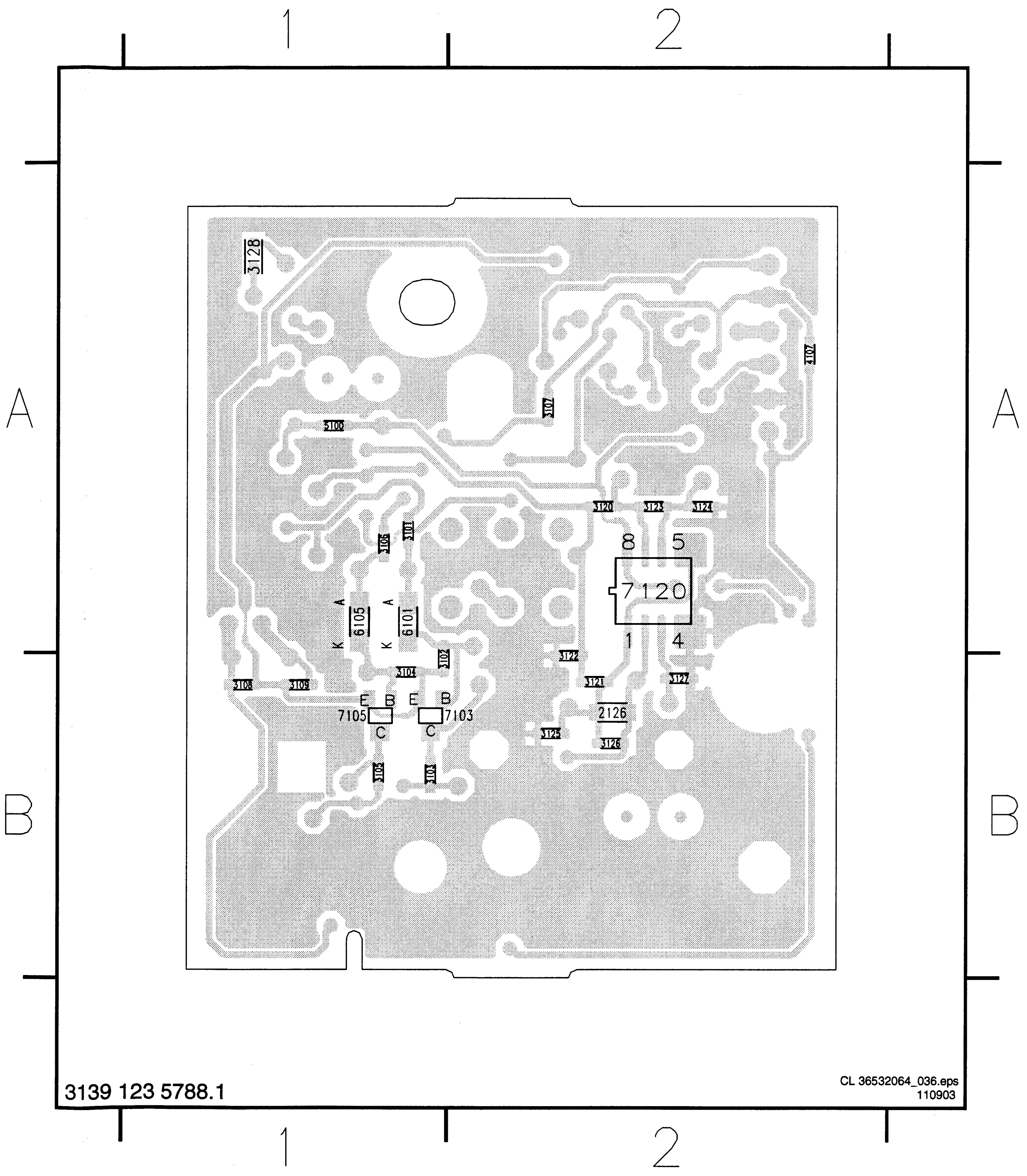
Layout LED/Switch Panel (ITV) (Top Side)

Item	Location
0317	A1
0320	A2
1101	A1
2107	B2
2108	A1
2109	A1
2120	B1
3110	A1
3111	A1
3112	A1
3129	A1
3130	A1
3131	A1
4101	A1
6102	A1
6103	B2
6127	B1
6128	A1
6129	A1
7104	A1
7107	B2
7108	A1

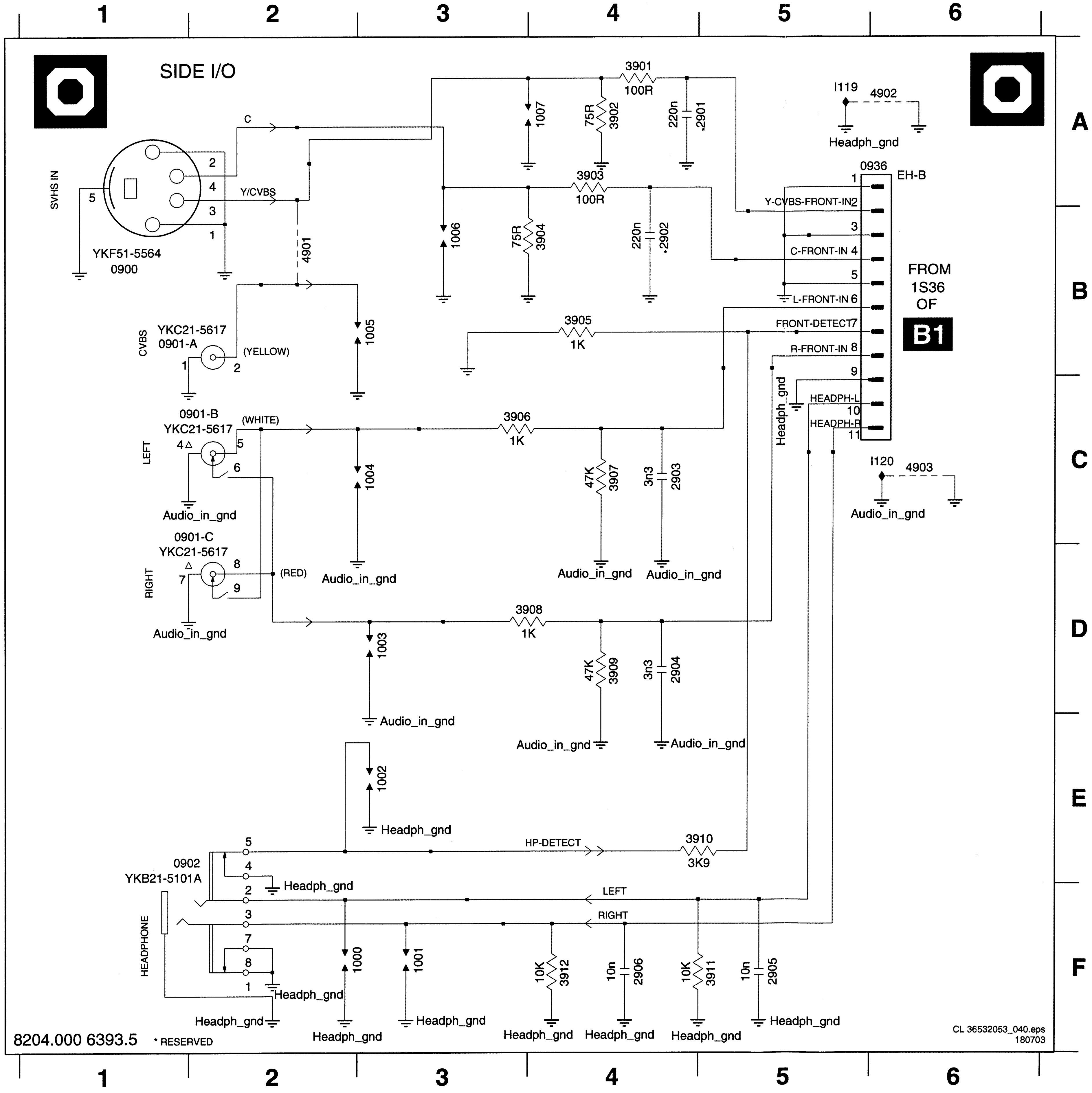

1
2
A
B
0317
3131
6129A
6128A
3129
3130
3110
2108
2109
6102A
3112
7108
4101
3111
7104
0320
1101
4
6
1
3
7107
2120
6127
6103
2107
3139 123 5788.1
CL 36532064_035.eps
110903

Layout LED/Switch Panel (ITV) (Bottom Side)

Item	Location
2126	B2
3101	A1
3102	B1
3103	B1
3104	B1
3105	B1
3106	A1
3107	A2
3108	B1
3109	B1
3120	A2
3121	B2
3122	B2
3123	A2
3124	A2
3125	B2
3126	B2
3127	B2
3128	A1
4107	A2
5100	A1
6101	A1
6105	A1
7103	B2
7105	B1
7120	A2

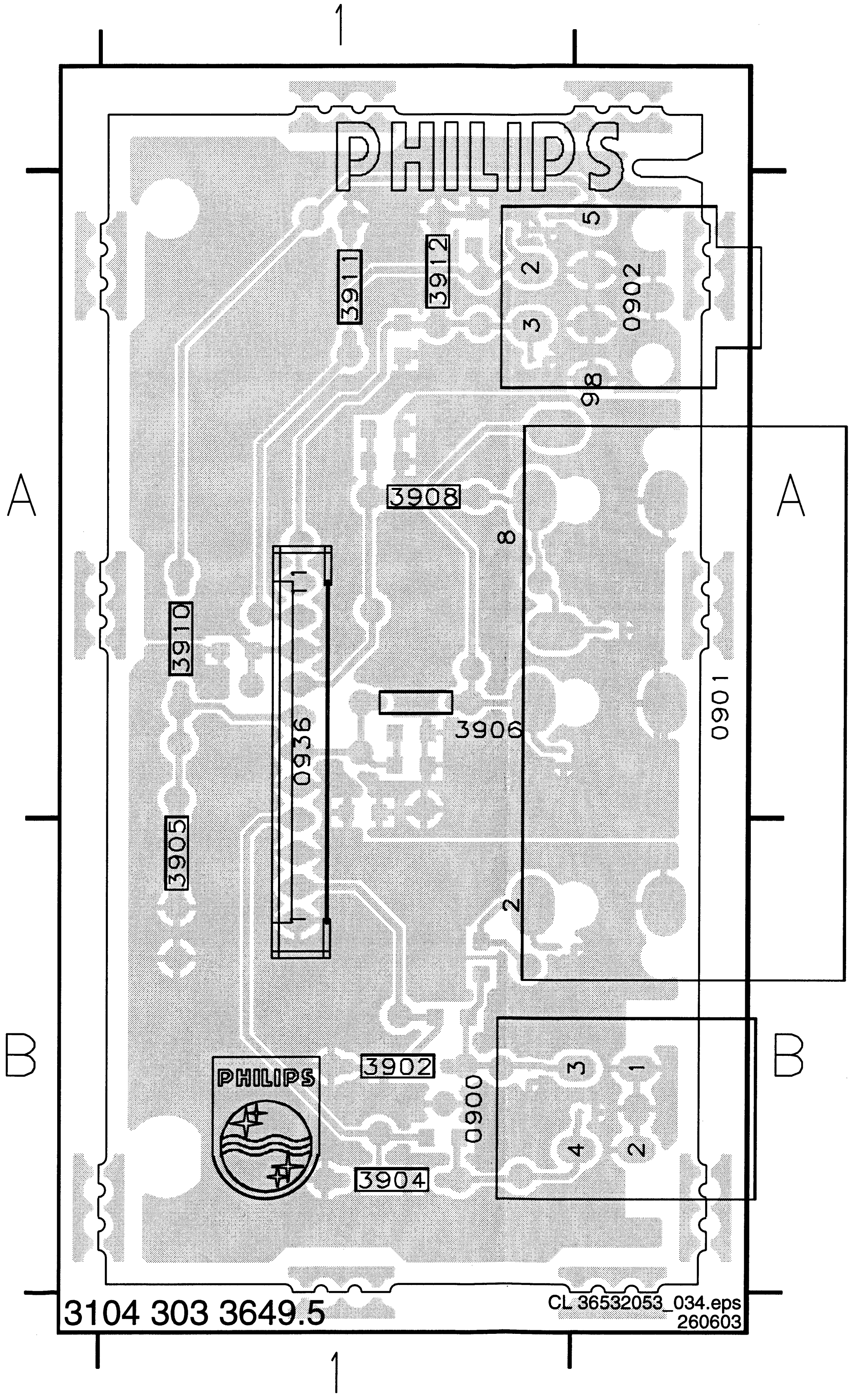

1
2
A
B
3128
7120
8
5
1
4
6105
6101
7105
7103
2126
3139 123 5788.1
CL 36532064_036.eps
110903

Side I/O


1
2
3
4
5
6
A
B
C
D
E
F
SIDE I/O
SVHS IN
YKF51-5564
0900
C
Y/CVBS
1
2
3
4
5
4901
3901
100R
1007
75R
3902
220n
2901
3903
100R
1006
75R
3904
220n
2902
1005
I119
4902
Headph_gnd
0936
EH-B
Y-CVBS-FRONT-IN
C-FRONT-IN
L-FRONT-IN
FRONT-DETECT
R-FRONT-IN
HEADPH-L
HEADPH-R
FROM
1S36
OF
B1
CVBS
YKC21-5617
0901-A
(YELLOW)
3905
1K
0901-B
YKC21-5617
LEFT
(WHITE)
3906
1K
1004
47K
3907
3n3
2903
Audio_in_gnd
I120
4903
0901-C
YKC21-5617
RIGHT
(RED)
3908
1K
1003
47K
3909
3n3
2904
1002
HP-DETECT
3910
3K9
0902
YKB21-5101A
HEADPHONE
LEFT
RIGHT
1000
1001
10K
3912
10n
2906
10K
3911
10n
2905
8204.000 6393.5
* RESERVED
CL 36532053_040.eps
180703

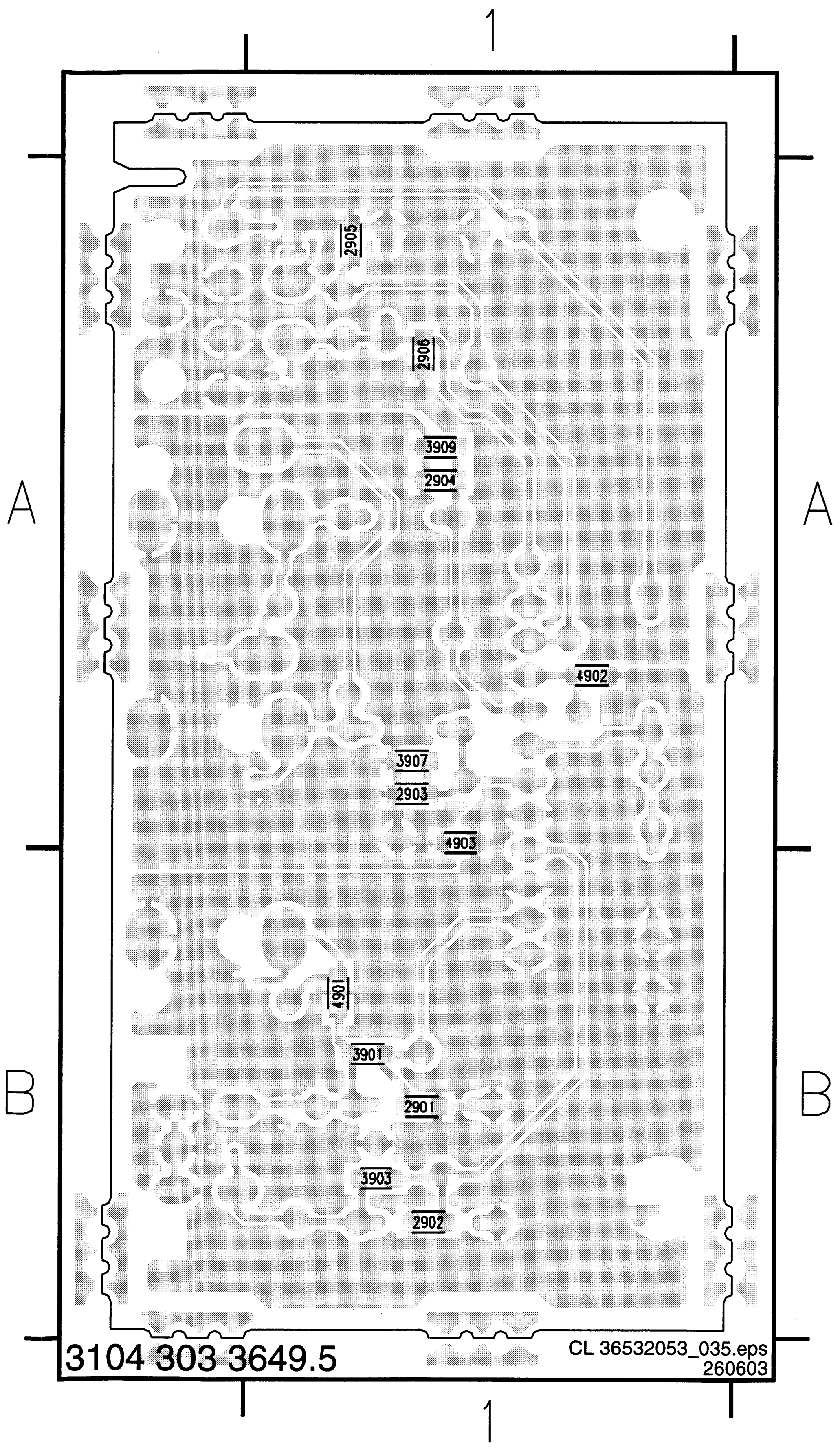
0900-A	B1
0901-A	B1
0901-B	C2
0901-C	C2
0902	E2
0936	A5
1000	F2
1001	F3
1002	E3
1003	D3
1004	C3
1005	B3
1006	B3
1007	A4
2901	A4
2902	B4
2903	C4
2904	D4
2905	F5
2906	F4
3901	A4
3902	A4
3903	A4
3904	B4
3905	B4
3906	C3
3907	C4
3908	D4
3909	D4
3910	E5
3911	F5
3912	F4
4901	B2
4902	A6
4903	C6

Layout Side I/O Panel (Top Side)


1
A
B
PHILIPS
3911
3912
5
2
3
0902
98
3908
8
1
3910
0936
3906
0901
3905
2
3902
3
1
0900
4
2
3904
PHILIPS
3104 303 3649.5
CL 36532053_034.eps
260603

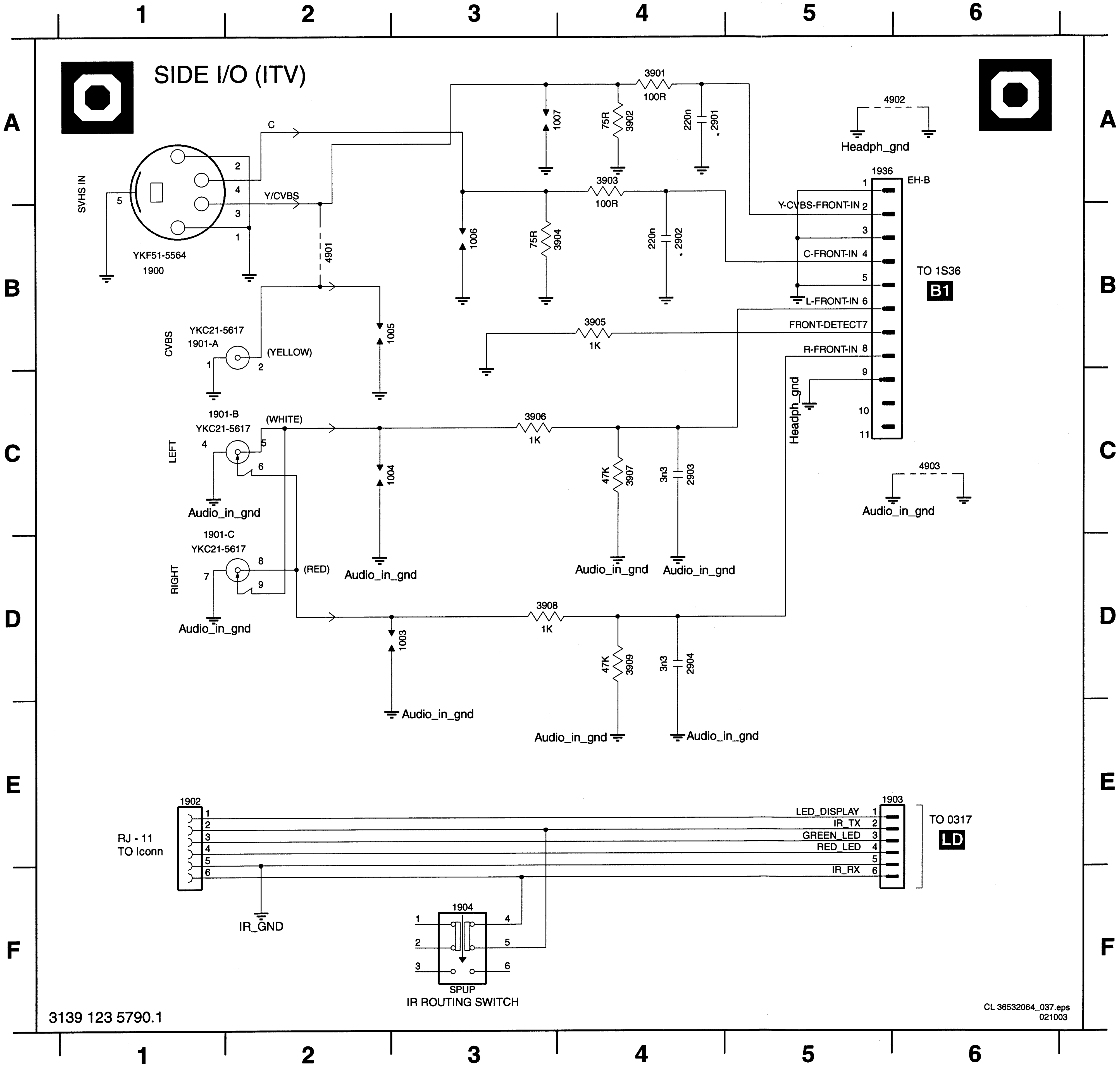
0900	B1
0901	A1
0902	A1
0936	A1
3902	B1
3904	B1
3905	B1
3906	A1
3908	A1
3910	A1
3911	A1
3912	A1

Layout Side I/O Panel (Bottom Side)


1
A
B
2905
2906
3909
2904
4902
3907
2903
4903
4901
3901
2901
3903
2902
3104 303 3649.5
CL 36532053_035.eps
260603

0900	B1
0901	A1
0902	A1
0936	A1
2901	B1
2902	B1
2903	A1
2904	A1
2905	A1
2906	A1
3901	B1
3902	B1
3903	B1
3904	B1
3905	B1
3906	A1
3907	A1
3908	A1
3909	A1
3910	A1
3911	A1
3912	A1
4901	B1
4902	A1
4903	A1

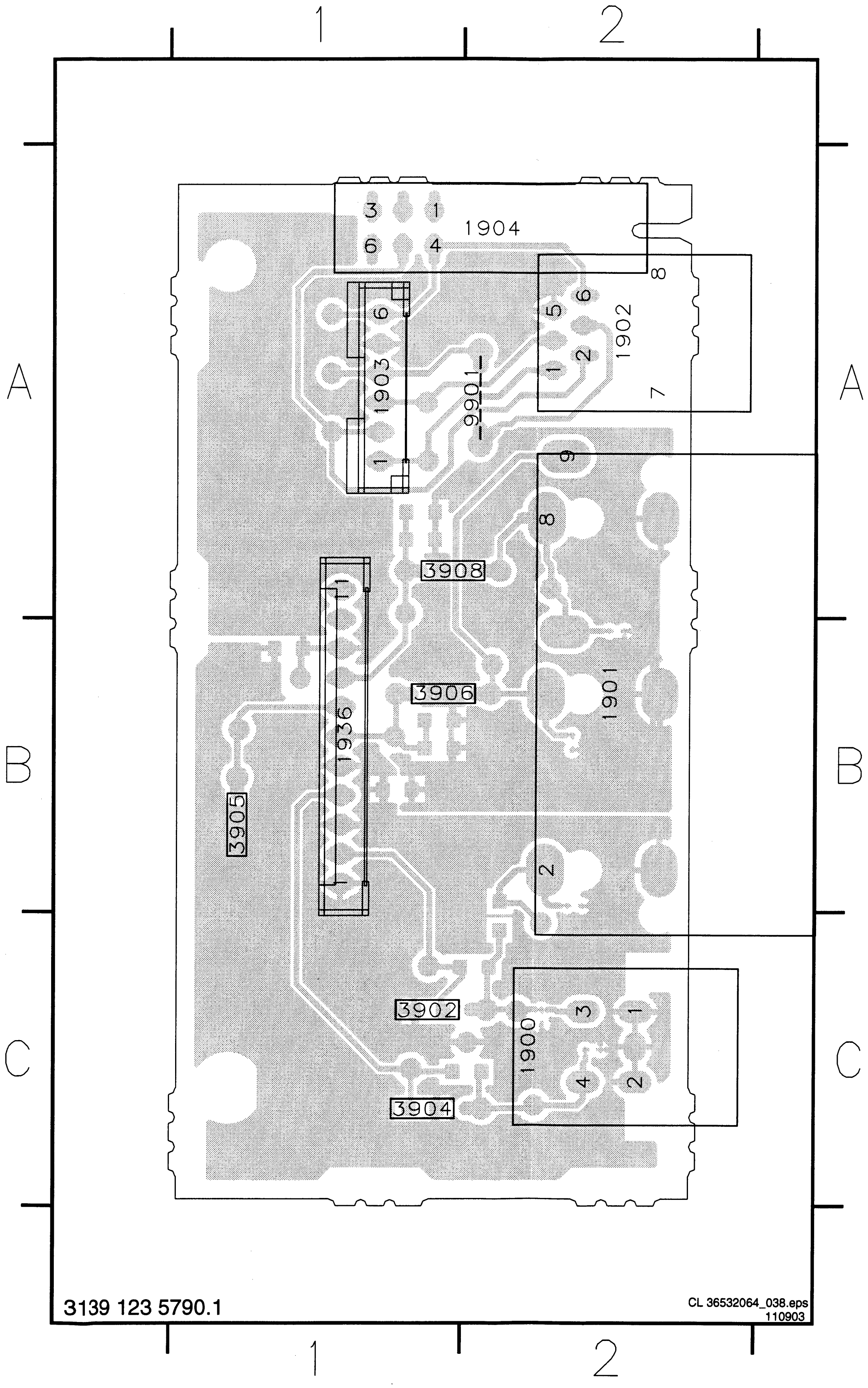
Side I/O (ITV)


1
2
3
4
5
6
A
B
C
D
E
F
SIDE I/O (ITV)
SVHS IN
YKF51-5564
1900
C
Y/CVBS
4901
3901
100R
1007
75R
3902
220n
2901
3903
100R
1006
75R
3904
220n
2902
4902
Headph_gnd
1936
EH-B
Y-CVBS-FRONT-IN 2
C-FRONT-IN 4
L-FRONT-IN 6
FRONT-DETECT7
R-FRONT-IN 8
TO 1S36
B1
3905
1K
1005
CVBS
YKC21-5617
1901-A
(YELLOW)
1901-B
YKC21-5617
(WHITE)
LEFT
3906
1K
1004
47K
3907
3n3
2903
Headph_gnd
4903
Audio_in_gnd
1901-C
YKC21-5617
RIGHT
(RED)
3908
1K
1003
47K
3909
3n3
2904
1902
RJ - 11
TO Iconn
1903
LED_DISPLAY
IR_TX
GREEN_LED
RED_LED
IR_RX
TO 0317
LD
IR_GND
1904
SPUP
IR ROUTING SWITCH
3139 123 5790.1
CL 36532064_037.eps
021003

1003	D3
1004	C2
1005	B2
1006	B3
1007	A3
1900	B1
1901-A	B1
1901-B	C1
1901-C	D1
1902	E1
1903	E5
1904	F3
1936	A5
2901	A4
2902	B4
2903	C4
2904	D4
3901	A4
3902	A4
3903	A4
3904	B3
3905	B4
3906	C3
3907	C4
3908	D3
3909	D4
4901	B2
4902	A6
4903	C6

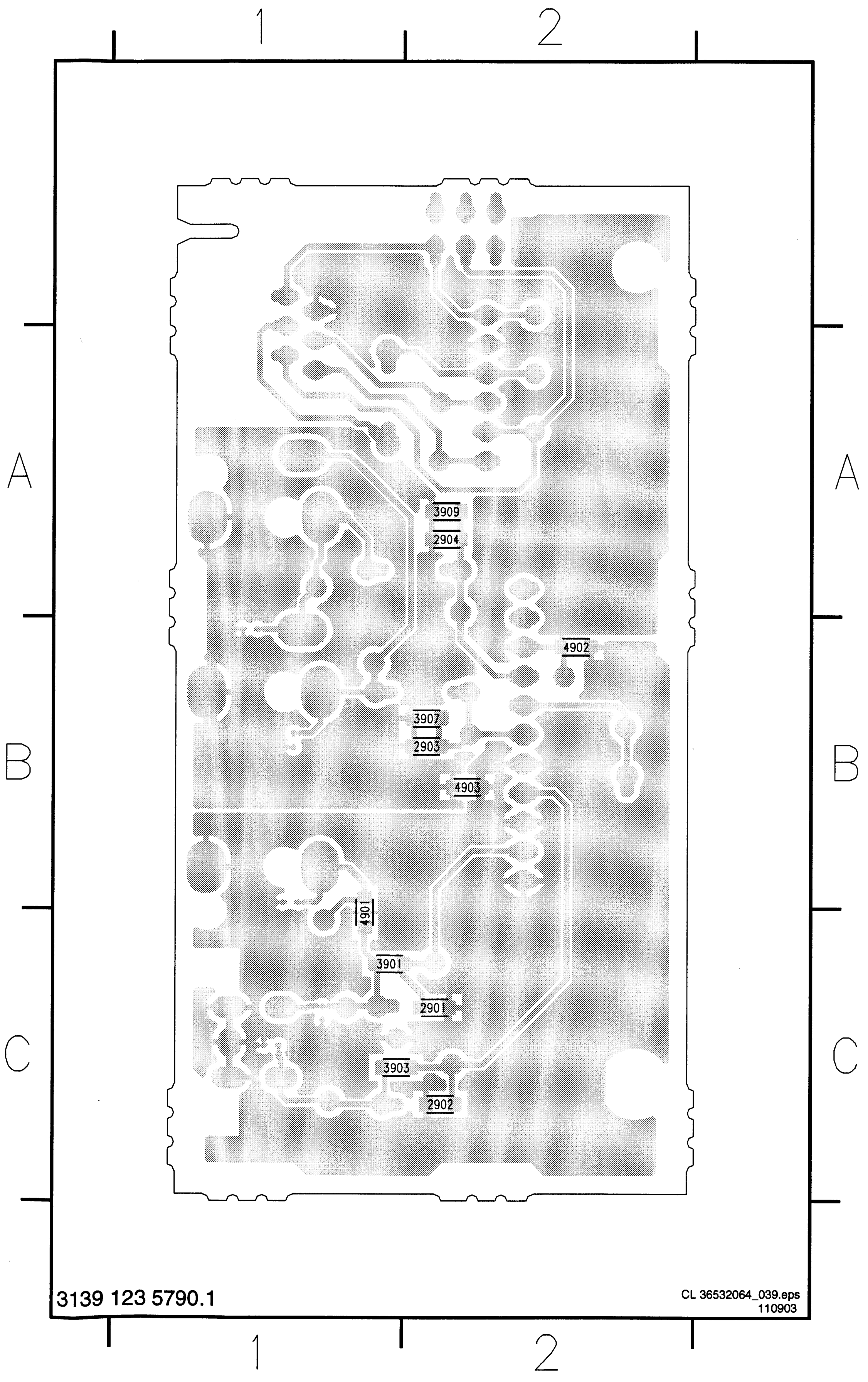
Layout Side I/O Panel (ITV) (Top Side)

1900	C2	1902	A2	1904	A2	3902	C1	3905	B1	3908	A1
1901	B2	1903	A1	1936	B1	3904	C1	3906	B1	9901	A2


1
2
A
B
C
1904
3
1
6
4
1902
8
5
6
1
2
7
1903
9
1
9901
1901
9
8
2
3908
3906
1936
11
1
3905
3902
3904
1900
3
1
4
2
3139 123 5790.1
CL 36532064_038.eps
110903

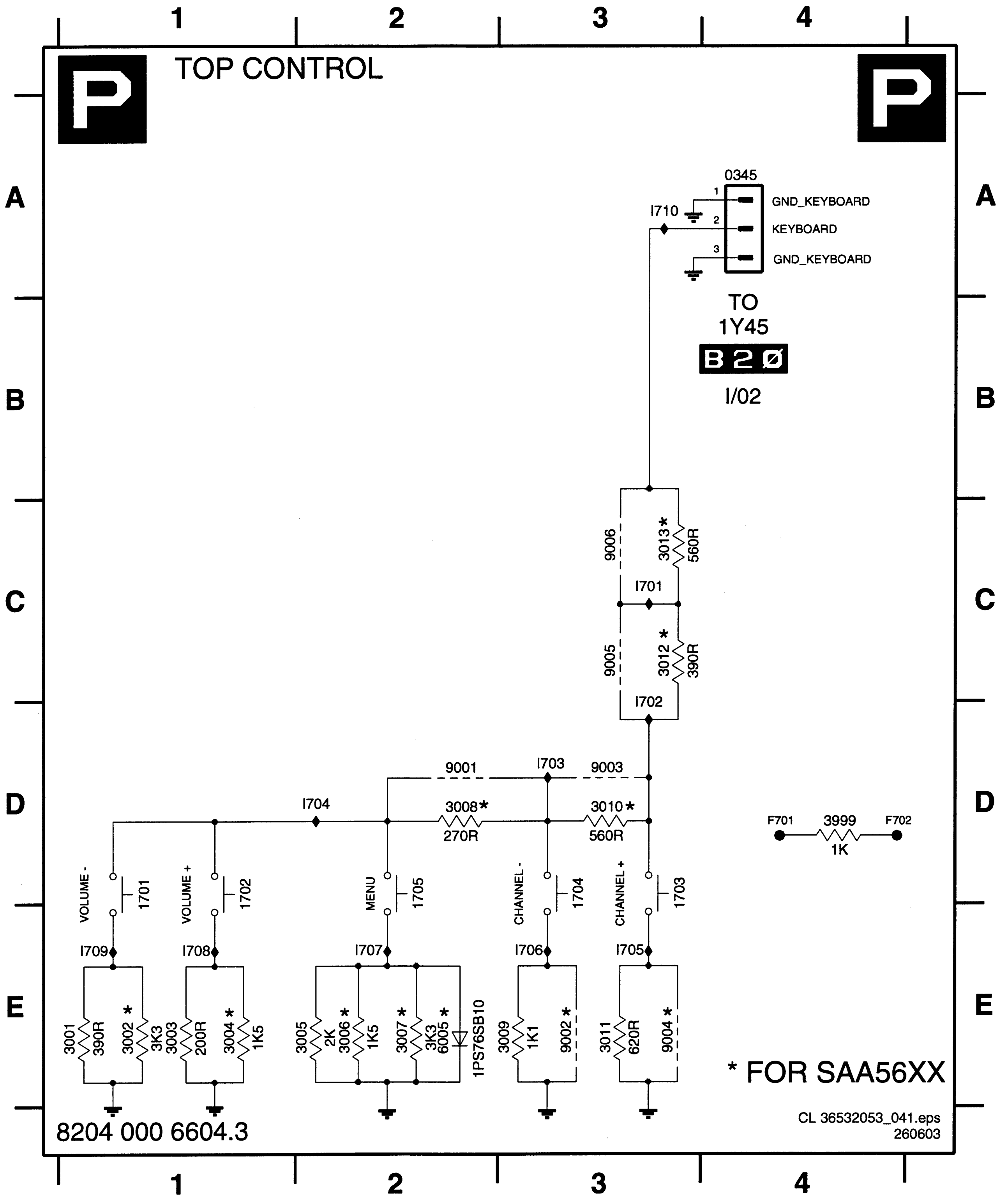
Layout Side I/O Panel (ITV) (Bottom Side)

2901	C2	2903	B2	3901	C1	3907	B2	4901	C1	4903	B2
2902	C2	2904	A2	3903	C1	3909	A2	4902	B2		


1
2
A
B
C
3909
2904
4902
3907
2903
4903
4901
3901
2901
3903
2902
3139 123 5790.1
CL 36532064_039.eps
110903

Top Control

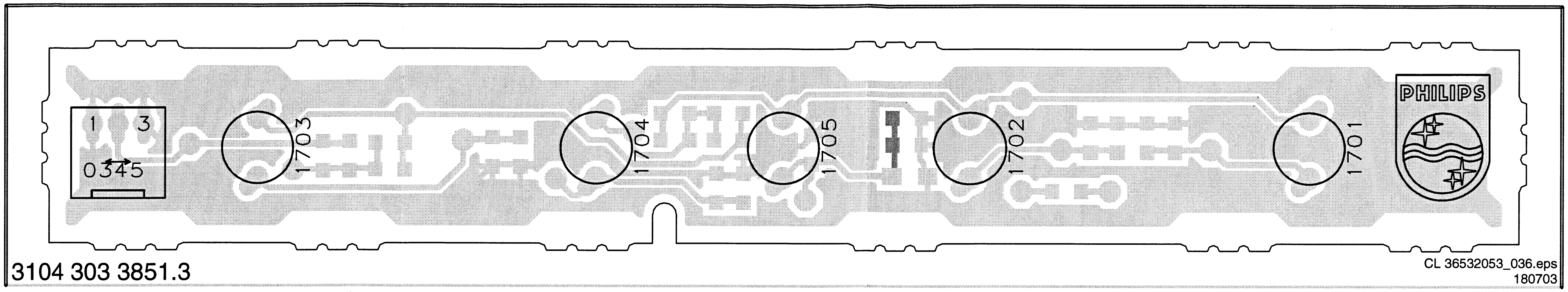
0345	A4
1701	D1
1702	D1
1703	D3
1704	D3
1705	D2
3001	E1
3002	E1
3003	E1
3004	E1
3005	E2
3006	E2
3007	E2
3008	D2
3009	E3
3010	D3
3011	E3
3012	C3
3013	C3
3999	D4
6005	E2
9001	D2
9002	E3
9003	D3
9004	E3
9005	C3
9006	C3
F701	D4
F702	D4
I701	C3
I702	D3
I703	D3
I704	D2
I705	E3
I706	E3
I707	E2
I708	E1
I709	E1
I710	A3


1
2
3
4
A
B
C
D
E
P
TOP CONTROL
P
0345
GND_KEYBOARD
KEYBOARD
GND_KEYBOARD
I710
TO
1Y45
B20
I/02
9006
3013*
560R
I701
9005
3012*
390R
I702
9001
I703
9003
I704
3008*
270R
3010*
560R
F701
3999
1K
F702
VOLUME -
1701
VOLUME +
1702
MENU
1705
CHANNEL -
1704
CHANNEL +
1703
I709
I708
I707
I706
I705
3001
390R
3002*
3K3
3003
200R
3004*
1K5
3005
2K
3006*
1K5
3007*
3K3
6005*
1PS76SB10
3009
1K1
9002*
3011
620R
9004*
* FOR SAA56XX
8204 000 6604.3
CL 36532053_041.eps
260603

Personal Notes:

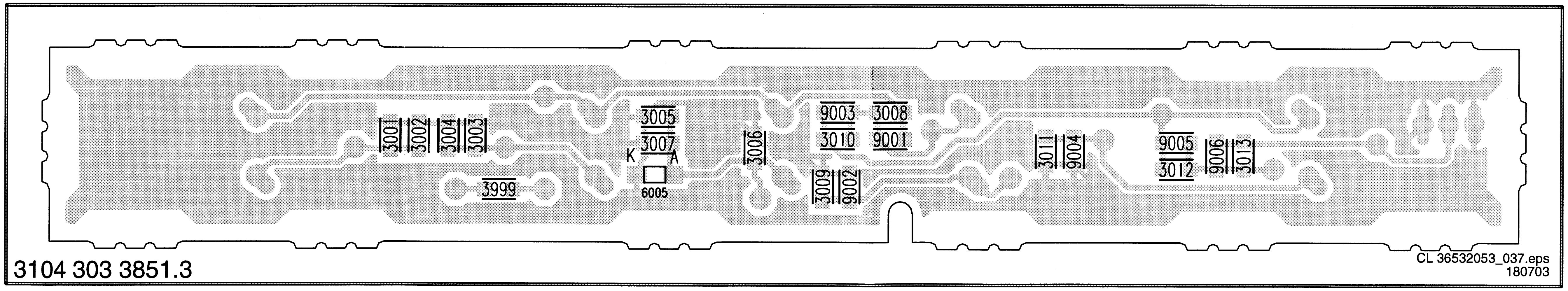
Layout Top Control Panel (Top Side)

0345 1701 1702 1703 1704 1705

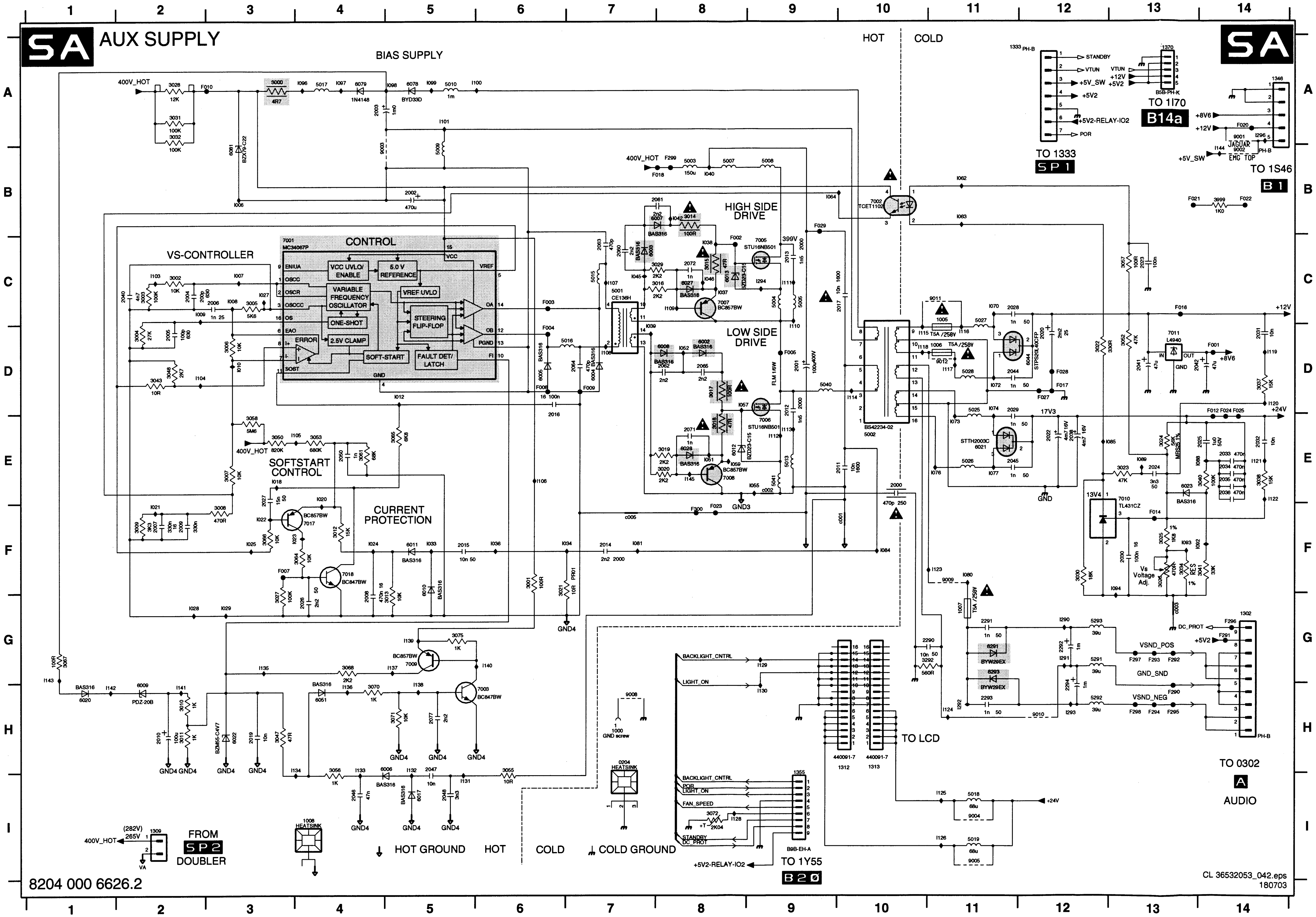

1
3
0345
1703
1704
1705
1702
1701
PHILIPS
3104 303 3851.3
CL 36532053_036.eps
180703

Layout Top Control Panel (Bottom Side)

3001 3003 3005 3007 3009 3011 3013 6005 9002 9004 9006
3002 3004 3006 3008 3010 3012 3999 9001 9003 9005

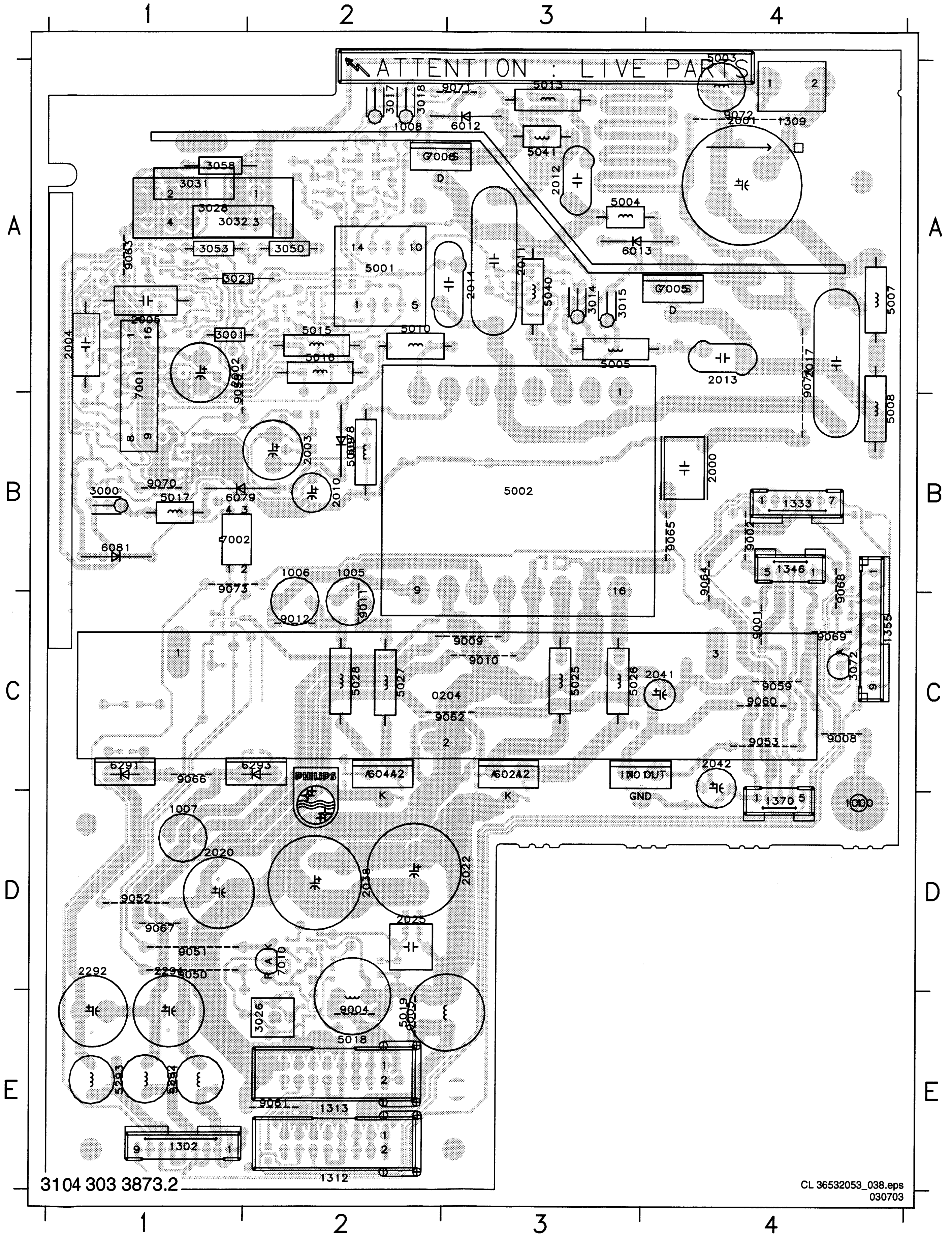

3001
3002
3004
3003
3999
3005
3007
K
A
6005
3006
9003
3008
3010
9001
3009
9002
3011
9004
9005
3012
9006
3013
3104 303 3851.3
CL 36532053_037.eps
180703

Aux Supply


SA
AUX SUPPLY
BIAS SUPPLY
HOT
COLD
VS-CONTROLLER
CONTROL
7001
MC34067P
VCC UVLO/ ENABLE
5.0 V REFERENCE
VARIABLE FREQUENCY OSCILLATOR
VREF UVLO
ONE-SHOT
STEERING FLIP-FLOP
ERROR
2.5V CLAMP
SOFT-START
FAULT DET/ LATCH
HIGH SIDE DRIVE
LOW SIDE DRIVE
SOFTSTART CONTROL
CURRENT PROTECTION
400V_HOT
+12V
+8V6
+24V
17V3
13V4
Vs Voltage Adj.
TO 1333
SP1
TO 1170
B14a
TO 1S46
B1
STANDBY
VTUN
+5V_SW
+5V2
+5V2-RELAY-IO2
POR
JAGUAR
EMG TOP
DC_PROT
VSND_POS
GND_SND
VSND_NEG
TO 0302
A
AUDIO
TO LCD
BACKLIGHT_CNTRL
LIGHT_ON
POR
FAN_SPEED
STANDBY
TO 1Y55
B20
FROM
SP2
DOUBLER
HOT GROUND
COLD GROUND
GND screw
HEATSINK
GND4
GND3
8204 000 6626.2
CL 36532053_042.eps
180703

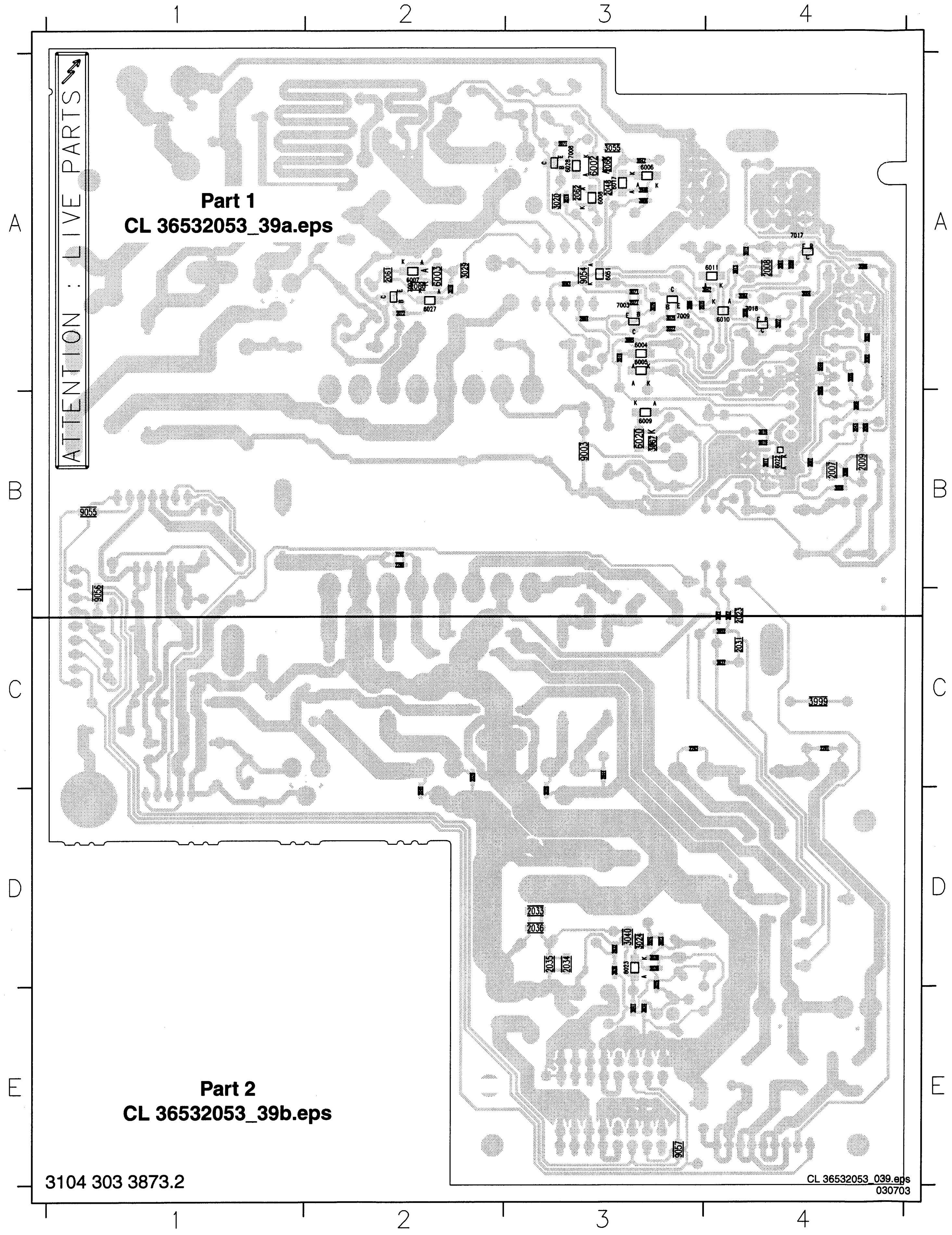
0204	H7
1000	H7
1005	C11
1006	D11
1007	G11
1008	I4
1302	G14
1309	I2
1312	H10
1313	H10
1333	A12
1346	A14
1355	I9
1370	A13
2000	E10
2001	D9
2002	B5
2003	A4
2004	C2
2005	D2
2006	C3
2007	F2
2008	G4
2009	F2
2010	H2
2011	E10
2012	D9
2013	C9
2014	F7
2015	F5
2016	D6
2017	C10
2019	H3
2020	D12
2022	E12
2023	C13
2024	E13
2025	E14
2026	G4
2027	E3
2028	C11
2029	D11
2030	F13
2031	D14
2032	E14
2033	E14
2034	E14
2035	E14
2036	E14
2038	E12
2040	C2
2041	D13
2042	D13
2044	D11
2045	E11
2046	I4
2047	H5
2048	I5
2050	E4
2060	C7
2061	B8
2062	D8
2063	C7
2064	D7
2065	D8
2071	E8
2072	C8
2077	H5
2290	G11
2291	G11
2292	G12
2293	H11
2294	H12
3000	A3
3001	F6
3002	C2
3003	C2
3004	D2
3005	C3
3006	D3
3007	E3
3008	F3
3009	F2
3010	H2
3011	H2
3012	F4
3013	G5
3014	B8
3015	C8
3016	C8
3017	D8
3018	E8
3019	E8
3020	E8
3021	F6
3022	D12
3023	E13
3024	E13
3025	F13
3026	F13
3027	G3
3028	A2
3029	C8
3030	F12
3031	A2
3032	A2
3034	F13
3037	D14
3038	E14
3040	E14
3041	F14
3043	D2
3047	H3
3048	D2
3050	E3
3052	D13
3053	E4
3055	H6
3056	H4
3057	C13
3058	E3
3061	E4
3064	F4
3065	E5
3066	F3
3067	G1
3068	G4
3070	H4
3071	H5
3072	I8
3075	G5
3292	G11
3999	B14
5001	C7
5002	E10
5003	B8
5004	C9
5005	C9
5007	B8
5008	B9
5009	B5
5010	A5
5013	E9
5015	C7
5016	D7
5017	A4
5018	I11
5019	I11
5025	D11
5026	E11
5027	C11
5028	D11
5040	D9
5041	E9
5291	G12
5292	H12
5293	G12
6002	D8
6003	C7
6004	D7
6005	D6
6006	H5
6007	B8
6008	D8
6009	H2
6010	F5
6011	F5
6012	E8
6013	C8
6017	I5
6020	H1
6021	E11
6022	H3
6023	E13
6027	C8
6028	E8
6044	D12
6051	H4
6078	A5
6079	A4
6081	B3
6291	G11
6293	G11
7001	C3
7002	B10
7003	H6
7005	C9
7006	E9
7007	C8
7008	E8
7009	G5
7010	E13
7011	D13
7017	F4
7018	F4
9001	A14
9002	B14
9003	B4
9004	I11
9005	I11
9008	H7
9009	F11
9010	H12
9011	C11
9012	D11
F001	D14
F002	C8
F003	C6
F004	D6
F005	D9
F007	F3
F008	D6
F009	D7
F010	A3
F012	D14
F014	F13
F016	C13
F017	D12
F018	B8
F020	A14
F021	B13
F022	B14
F023	F8
F024	D14
F025	D14
F027	D12
F028	D12
F029	B9
F290	H13
F291	G14
F292	G13
F293	G13
F294	H13
F295	H13
F296	G14
F297	G13
F298	H13
F299	B8
F300	F8
I006	B3
I007	C3
I008	C3
I009	C2
I010	D3
I012	D5
I018	E3
I020	E4
I021	F2
I022	F3
I023	F3
I024	F4
I025	F3
I027	C3
I028	G2
I029	G3
I033	F5
I034	F7
I036	F6
I037	C8
I038	C8
I039	D7
I040	B8
I042	B8
I045	C7
I046	C8
I051	E8
I052	D8
I055	E9
I057	D8
I059	E8
I062	B11
I063	B11
I064	B9
I070	C11
I072	D11
I073	E11
I074	D11
I076	E11
I077	E11
I080	F11
I081	F7
I084	F10
I085	E13
I088	E13
I089	E13
I092	F13
I093	F13
I094	F13
I096	A4
I097	A4
I098	A5
I099	A5
I100	A6
I101	A5
I103	C2
I104	D2
I105	E4
I106	E6
I107	C7
I108	D7
I109	C8
I110	D9
I111	C9
I112	E9
I113	E9
I114	D10
I115	D10
I116	D11
I117	D11
I118	D10
I119	D14
I120	D14
I121	E14
I122	E14
I123	F11
I124	H11
I125	I11
I126	I11
I128	I8
I129	G9
I130	H9
I131	I5
I132	H5
I133	H4
I134	H4
I135	G3
I136	H4
I137	G5
I138	H5
I139	G5
I140	G6
I141	H2
I142	H1
I143	G1
I144	B14
I145	E8
I290	G12
I291	G12
I292	H11
I293	H12
I294	C9
I296	A14
c001	F10
c002	E9
c003	G13
c005	F7

Layout Aux Supply Panel (Top Side)



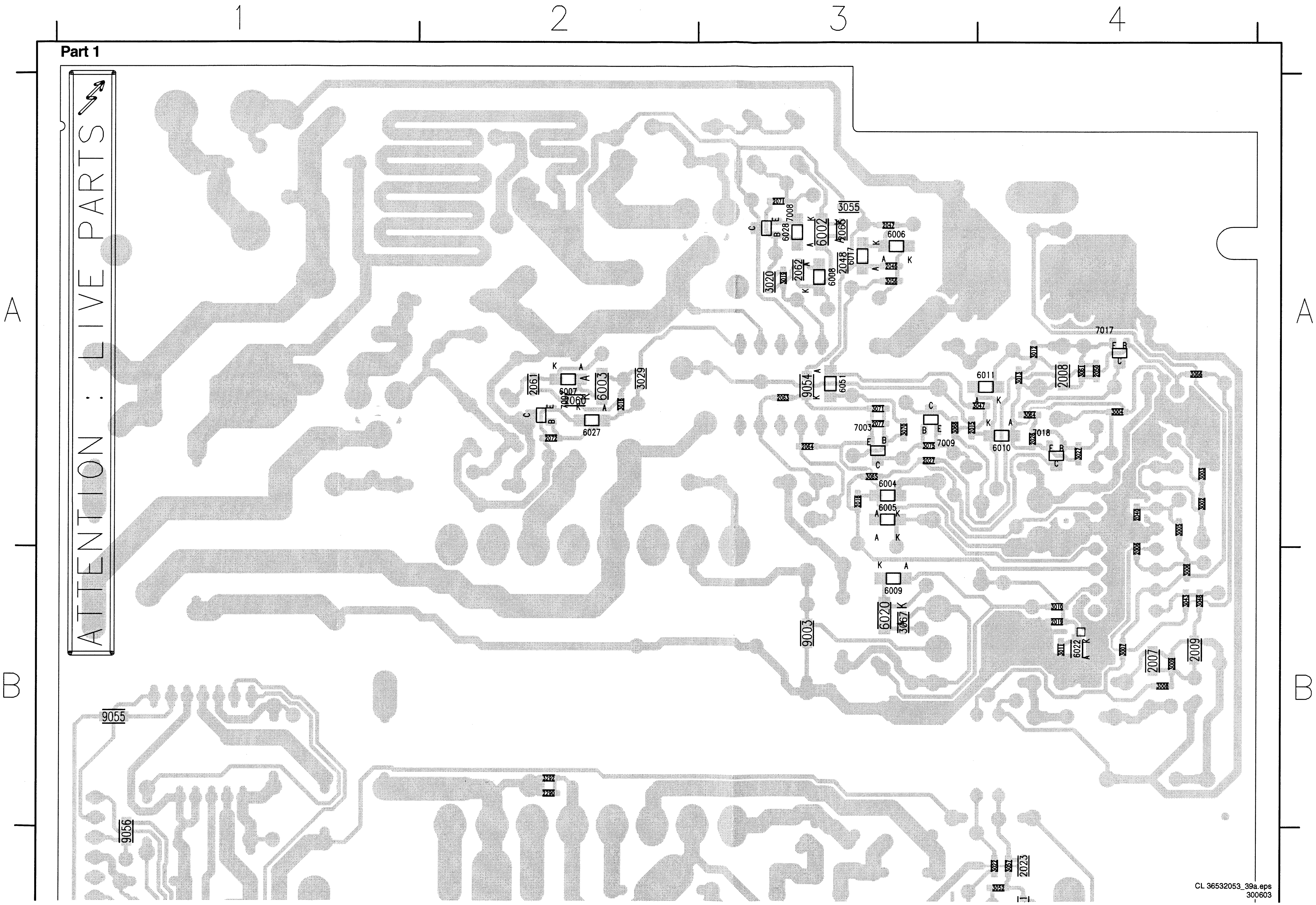
0204	C3
1000	C4
1005	B2
1006	B2
1007	D1
1008	A2
1302	E1
1309	A4
1312	E2
1313	E2
1333	B4
1346	B4
1355	C4
1370	C4
2000	B4
2001	A4
2002	B1
2003	B2
2004	A1
2005	A1
2010	B2
2011	A3
2012	A3
2013	A4
2014	A3
2017	B4
2020	D1
2022	D3
2025	D2
2038	D2
2041	C4
2042	D4
2292	D1
2294	E1
3000	B1
3001	A1
3014	A3
3015	A3
3017	A2
3018	A2
3021	A1
3026	E1
3028	A2
3031	A1
3032	A2
3050	A2
3053	A1
3058	A1
3072	C4
5001	A2
5002	A3
5003	A4
5004	A4
5005	A3
5007	A4
5008	B4
5009	B2
5010	A3
5013	A3
5015	A2
5016	B2
5017	B1
5018	D2
5019	D2
5025	C3
5026	C3
5027	C2
5028	C2
5040	A3
5041	A3
5291	E1
5292	E1
5293	E1
6012	A3
6013	A3
6021	D3
6044	D2
6078	B2
6079	B1
6081	B1
6291	D1
6293	D2
7001	B1
7002	B1
7005	A4
7006	A2
7010	D2
7011	D3
9001	C4
9002	B4
9004	E2
9005	E2
9008	C4
9009	C3
9010	C3
9011	C2
9012	C2
9050	D1
9051	D1
9052	D1
9053	C4
9058	A1
9059	C4
9060	C4
9061	E1
9062	C3
9063	A1
9064	B4
9065	B4
9066	C1
9067	D1
9068	B4
9069	C4
9070	B1
9071	A3
9072	A4
9073	C1
9074	A4

Layout Aux Supply Panel (Bottom Side Overview)


1
2
3
4
A
B
C
D
E
ATTENTION : LIVE PARTS
Part 1
CL 36532053_39a.eps
Part 2
CL 36532053_39b.eps
3104 303 3873.2
CL 36532053_039.eps
030703

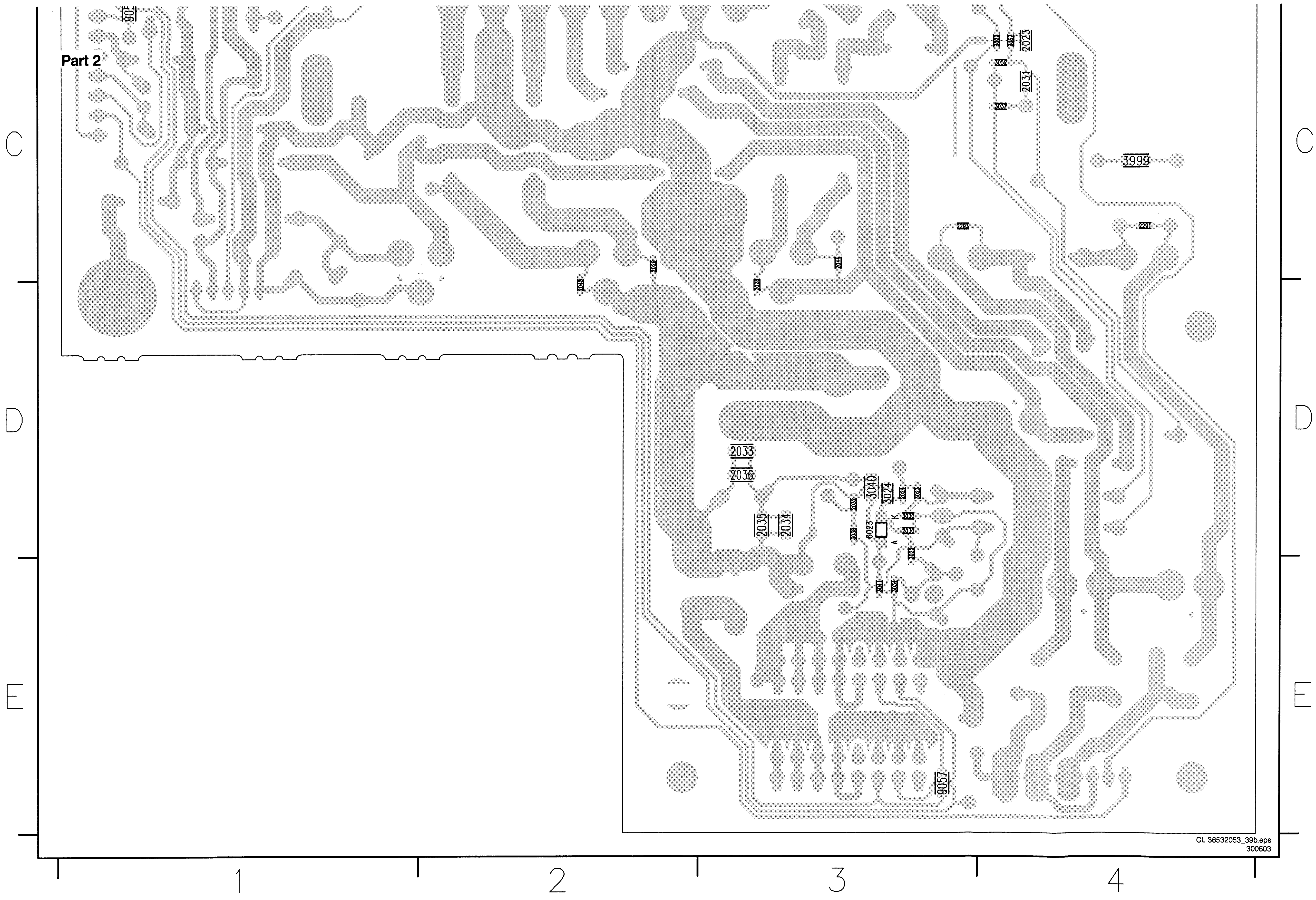
2006	B4
2007	B4
2008	A4
2009	B4
2015	A3
2016	A3
2019	B4
2023	C4
2024	D3
2026	A4
2027	A3
2028	D3
2029	C2
2030	D3
2031	C4
2032	D3
2033	D3
2034	D3
2035	D3
2036	D3
2040	A4
2044	C3
2045	D2
2046	A3
2047	A3
2048	A3
2050	A4
2060	A2
2061	A2
2062	A3
2063	A3
2064	A3
2065	A3
2071	A3
2072	A2
2077	A3
2290	B2
2291	C4
2293	C3
3002	A4
3003	A4
3004	A4
3005	A4
3006	B4
3007	B4
3008	B4
3009	B4
3010	B4
3011	B4
3012	A4
3013	A4
3016	A2
3019	A3
3020	A3
3022	C4
3023	D3
3024	D3
3025	D3
3027	A4
3029	A2
3030	D3
3034	E3
3037	C4
3038	D3
3040	D3
3041	E3
3043	B4
3047	A4
3048	B4
3052	C4
3055	A3
3056	A3
3057	C4
3061	A4
3064	A4
3065	A3
3066	A4
3067	B3
3068	A3
3070	A3
3071	A3
3075	A3
3292	B2
3999	C4
6002	A3
6003	A2
6004	A3
6005	A3
6006	A3
6007	A2
6008	A3
6009	B3
6010	A4
6011	A4
6017	A3
6020	B3
6022	B4
6023	D3
6027	A2
6028	A3
6051	A3
7003	A3
7007	A2
7008	A3
7009	A3
7017	A4
7018	A4
9003	B3
9054	A3
9055	B1
9056	C1
9057	E3

Layout Aux Supply Panel (Bottom Side Part 1)


1
2
3
4
A
B
Part 1
ATTENTION : LIVE PARTS
3055
6028
7008
6002
6006
6017
2062
3020
6008
2048
7017
2061
6007
6003
3029
2060
6027
9054
6051
6011
2008
7003
7009
6010
7018
6004
6005
6009
6020
3067
9003
6022
2007
2009
9055
9056
2023

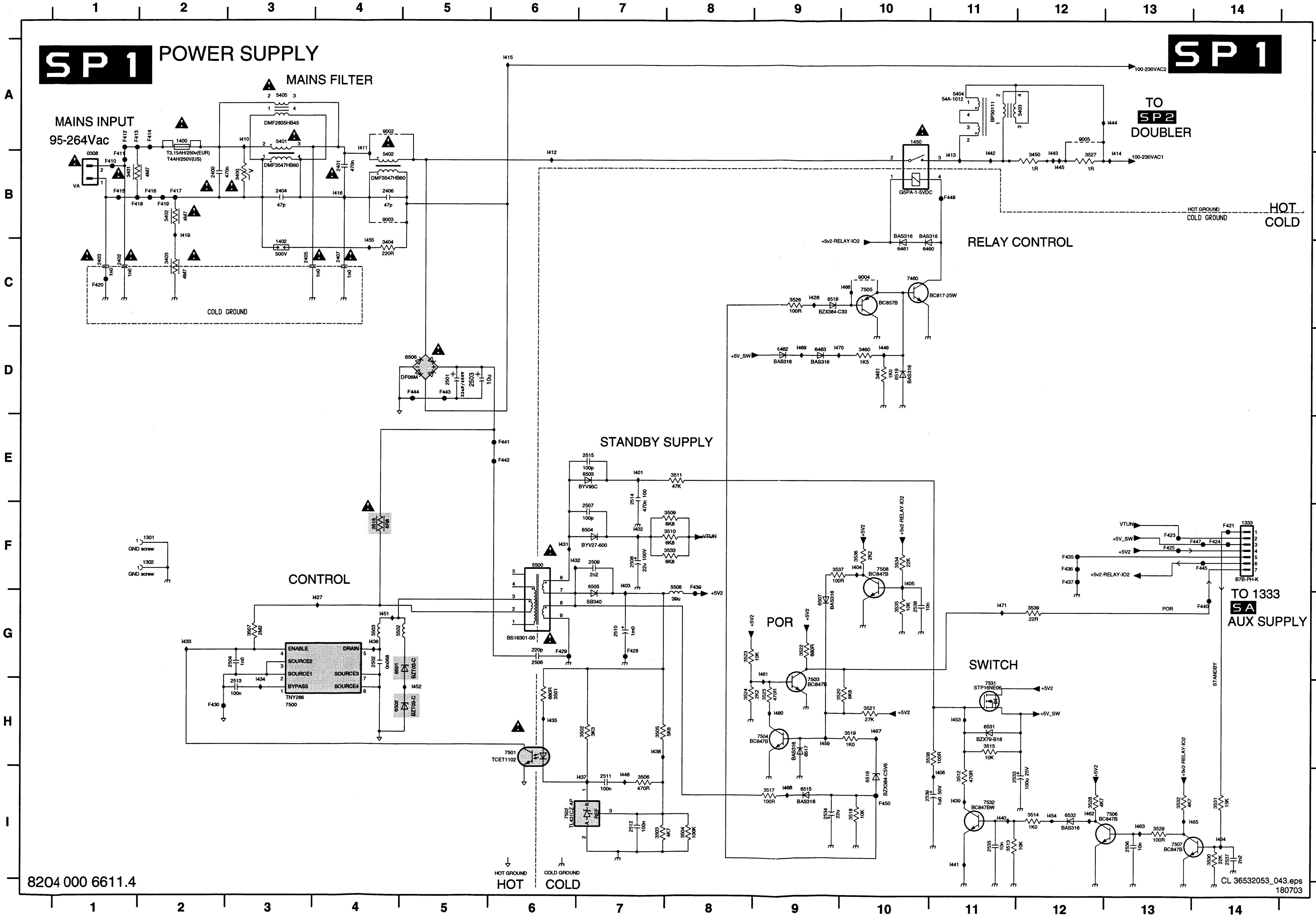
CL 36532053_39a.eps
300603

Layout Aux Supply Panel (Bottom Side Part 2)


Part 2
2023
2031
3999
2033
2036
2035
2034
3040
3024
6023
K
A
9057
C
D
E
1
2
3
4

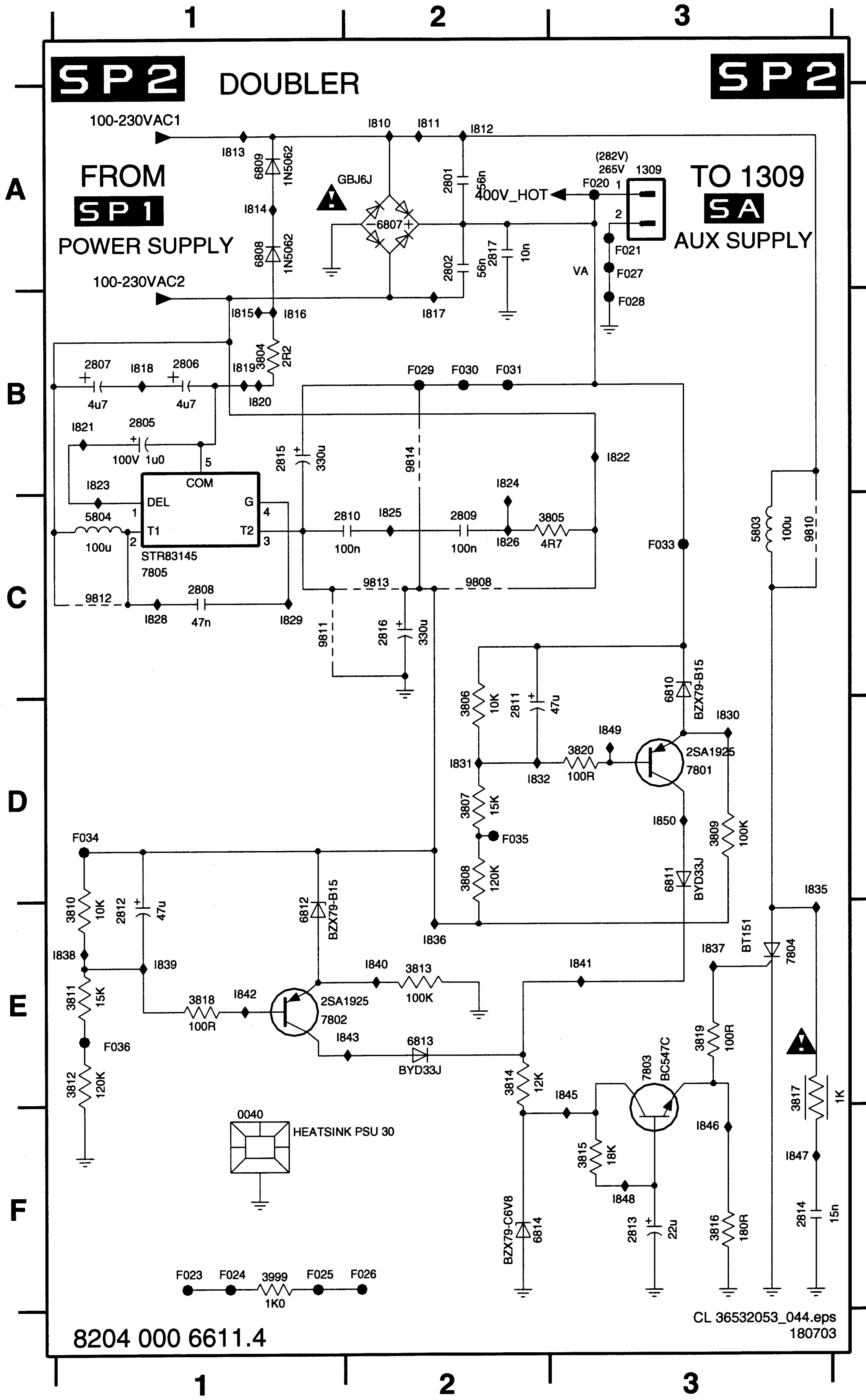
CL 36532053_39b.eps
300603

Power Supply


SP1 POWER SUPPLY
SP1
MAINS FILTER
MAINS INPUT
95-264Vac
T3,15AH/250v(EUR)
T4AH/250V(US)
DMF2835HB45
DMF3547HB60
100-230VAC2
100-230VAC1
TO SP2 DOUBLER
HOT GROUND
COLD GROUND
HOT
COLD
RELAY CONTROL
G5PA-1-5VDC
BAS316
BC857B
BC817-25W
BZX384-C33
+5V_SW
+5v2-RELAY-IO2
STANDBY SUPPLY
BYV95C
BYV27-600
SB340
VTUN
+5V2
BS16301-00
CONTROL
ENABLE
DRAIN
SOURCE2
SOURCE1
SOURCE3
BYPASS
SOURCE4
TNY266
7500
BZT03-C
TCET1102
TL431CZ-AP
POR
BC847B
BZX384-C5V6
SWITCH
STP16NE06
BZX79-B18
BC847BW
STANDBY
TO 1333 SA AUX SUPPLY
B7B-PH-K
8204 000 6611.4
CL 36532053_043.eps
180703

0308	B1
1301	F2
1302	F2
1333	F14
1400	A2
1402	C3
1450	A10
2400	B2
2401	B4
2402	C1
2403	C1
2404	B3
2405	C3
2406	B4
2407	C4
2501	D5
2502	G4
2503	D5
2504	G3
2506	G6
2507	F7
2508	F7
2509	F7
2510	G7
2511	I7
2512	I7
2513	H3
2514	E7
2515	E7
2533	I11
2534	I9
2535	I11
2536	I13
2537	I14
2538	G10
2539	I10
3400	B3
3401	B1
3402	B2
3403	C2
3404	C4
3450	B12
3460	D10
3461	D10
3501	H6
3502	H7
3503	I7
3504	I8
3505	H7
3506	I7
3507	G3
3509	F8
3510	F8
3511	E8
3512	I11
3513	I11
3514	I12
3515	H11
3516	F4
3517	I9
3518	I10
3519	H10
3520	H10
3521	H10
3522	G9
3523	G8
3524	H8
3525	H9
3526	C9
3527	B12
3528	I12
3529	I13
3530	I14
3531	I14
3532	I13
3533	F8
3534	F10
3535	G10
3536	F10
3537	F9
3538	H11
3539	G12
5401	A3
5402	B4
5403	A12
5404	A11
5405	A3
5500	F6
5502	G4
5503	G4
5506	F8
6460	C10
6461	C10
6462	D9
6463	D9
6501	G4
6502	H4
6503	E7
6504	F7
6505	F7
6506	D5
6507	G9
6515	I9
6516	I10
6517	H9
6518	C9
6519	D10
6531	H11
6532	I12
7460	C10
7500	H3
7501	H6
7502	I6
7503	H9
7504	H9
7505	C10
7506	I13
7507	I13
7508	F10
7531	H11
7532	I11
9002	A4
9003	B4
9004	C10
9005	A12
F410	B1
F411	B1
F412	A1
F413	A1
F414	A2
F415	B1
F416	B2
F417	B2
F418	B1
F419	B2
F420	C1
F421	F14
F423	F13
F424	F14
F425	F13
F428	G7
F429	G6
F430	H2
F435	F12
F436	F12
F437	F12
F439	F8
F440	G14
F441	E6
F442	E6
F443	D5
F444	D5
F445	F14
F447	F14
F448	B11
F450	I10
I401	E7
I402	F7
I403	F7
I404	F10
I405	F10
I406	I11
I410	A3
I411	A4
I412	B6
I413	B11
I414	B13
I415	A6
I416	B4
I419	B2
I427	G4
I428	C9
I431	F6
I432	F6
I433	G2
I434	H3
I435	H6
I436	G4
I437	I7
I438	H7
I439	I11
I440	I11
I441	I11
I442	B11
I443	B12
I444	A13
I445	B12
I446	D10
I448	I7
I451	G4
I452	H5
I453	H11
I454	I12
I455	C4
I459	H9
I460	H9
I461	G9
I462	I12
I463	I13
I464	I14
I465	I14
I466	C10
I467	H10
I468	I9
I469	D9
I470	D9
I471	G11

Doubler


SP2
DOUBLER
SP2
100-230VAC1
FROM
SP1
POWER SUPPLY
100-230VAC2
GBJ6J
6807
1N5062
6809
6808
2801 56n
2802 56n
2817 10n
(282V)
265V
1309
F020
400V_HOT
TO 1309
SA
AUX SUPPLY
VA
F021
F027
F028
2807 4u7
2806 4u7
3804 2R2
2805 100V 1u0
COM
DEL
G
T1
T2
STR83145
7805
5804 100u
2808 47n
2815 330u
2816 330u
2810 100n
2809 100n
3805 4R7
9814
9813
9808
9812
9811
5803 100u
9810
F029
F030
F031
F033
3806 10K
2811 47u
6810 BZX79-B15
3820 100R
2SA1925
7801
3807 15K
F035
3808 120K
6811 BYD33J
3809 100K
F034
3810 10K
2812 47u
6812 BZX79-B15
3811 15K
3818 100R
2SA1925
7802
3813 100K
6813 BYD33J
F036
3812 120K
3814 12K
7803 BC547C
3819 100R
BT151
7804
3817 1K
3815 18K
2813 22u
3816 180R
2814 15n
6814 BZX79-C6V8
0040
HEATSINK PSU 30
F023
F024
3999 1K0
F025
F026
A
B
C
D
E
F
1
2
3
8204 000 6611.4
CL 36532053_044.eps
180703

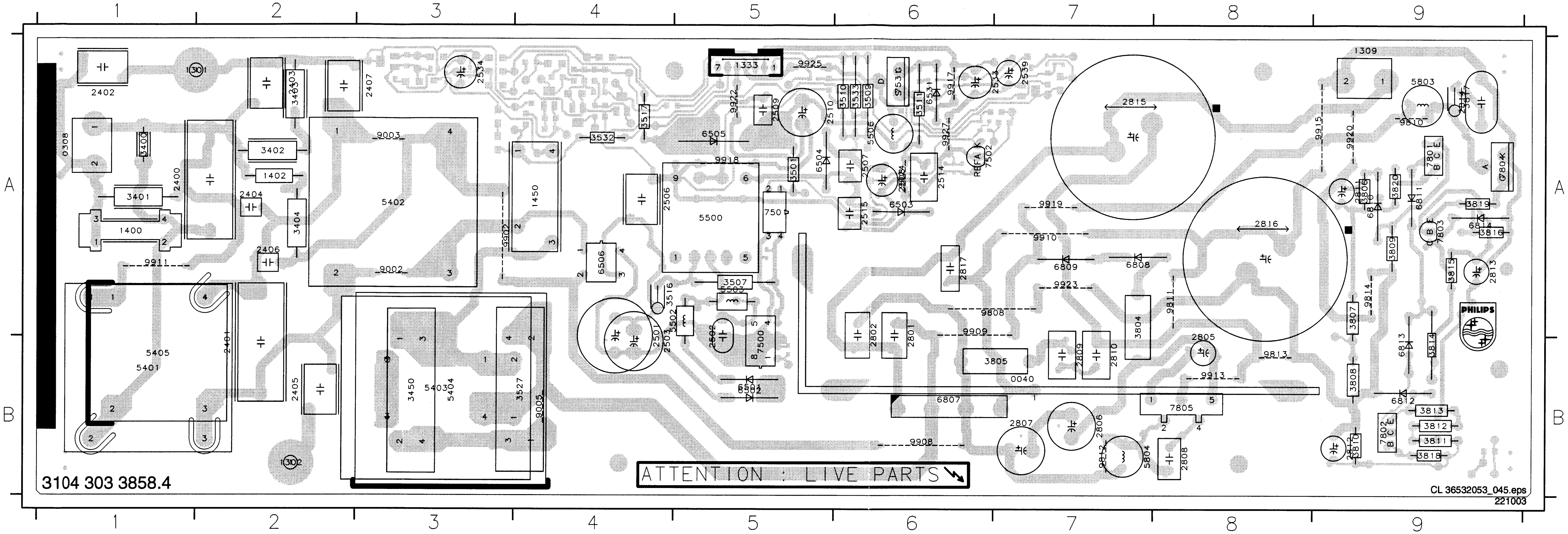
0040	F1
1309	A3
2801	A2
2802	A2
2805	B1
2806	B1
2807	B1
2808	C1
2809	C2
2810	C2
2811	D2
2812	E1
2813	F3
2814	F3
2815	B1
2816	C2
2817	A2
3804	B1
3805	C3
3806	D2
3807	D2
3808	D2
3809	D3
3810	E1
3811	E1
3812	E1
3813	E2
3814	E2
3815	F3
3816	F3
3817	E3
3818	E1
3819	E3
3820	D3
3999	F1
5803	C3
5804	C1
6807	A2
6808	A1
6809	A1
6810	C3
6811	D3
6812	E1
6813	E2
6814	F2
7801	D3
7802	E1
7803	E3
7804	E3
7805	C1
9808	C2
9810	C3
9811	C1
9812	C1
9813	C2
9814	B2
F020	A3
F021	A3
F023	F1
F024	F1
F025	F1
F026	F2
F027	A3
F028	B3
F029	B2
F030	B2
F031	B2
F033	C3
F034	D1
F035	D2
F036	E1
I810	A2
I811	A2
I812	A2
I813	A1
I814	A1
I815	B1
I816	B1
I817	B2
I818	B1
I819	B1
I820	B1
I821	B1
I822	B3
I823	B1
I824	B2
I825	C2
I826	C2
I828	C1
I829	C1
I830	D3
I831	D2
I832	D2
I835	D3
I836	E2
I837	E3
I838	E1
I839	E1
I840	E2
I841	E3
I842	E1
I843	E2
I845	E3
I846	F3
I847	F3
I848	F3
I849	D3
I850	D3

Personal Notes:

E_06532_012.eps
131004

Layout Power Supply Panel (Top Side)

0040 B5	1402 A2	2405 B2	2507 A5	2534 A3	2808 B8	2815 A7	3404 A2	3516 A4	3806 A9	3813 B9	3820 A9	5502 A4	6503 A6	6809 A7	7501 A5	7805 B8	9812 B7	9911 A2	9922 A5
0308 A1	1450 A4	2406 A2	2508 A6	2539 A7	2809 B7	2816 A8	3450 B3	3517 A4	3807 A9	3814 B9	5401 A1	5503 A5	6504 A5	6810 A9	7502 A6	9002 A3	9813 B8	9913 B8	9923 A7
1301 A1	2400 A1	2407 A3	2509 A5	2801 A6	2810 B7	2817 A6	3501 A5	3527 B3	3808 B9	3815 A9	5402 A3	5506 A6	6505 A5	6811 A9	7531 A6	9003 A3	9814 A9	9915 A9	9924 A6
1302 B2	2401 A2	2501 A4	2510 A5	2802 A6	2811 A9	3400 A1	3507 A5	3532 A4	3809 A9	3816 A9	5403 B3	5803 A9	6506 A4	6812 B9	7801 A9	9005 B4	9902 A3	9917 A6	9925 A5
1309 A9	2402 A1	2502 A5	2514 A6	2805 A8	2812 B9	3401 A1	3509 A6	3533 A6	3810 B9	3817 A9	5404 B2	5804 B7	6531 A6	6813 B9	7802 B9	9808 A7	9908 B6	9918 A5	9927 A6
1333 A5	2403 A2	2503 B4	2515 A6	2806 B7	2813 A9	3402 A2	3510 A5	3804 A7	3811 B9	3818 B9	5405 A1	6501 B5	6807 B6	6814 A9	7803 A9	9810 A9	9909 A6	9919 A7	
1400 A1	2404 A2	2506 A4	2533 A6	2807 B7	2814 A9	3403 A2	3511 A6	3805 B7	3812 B9	3819 A9	5500 A4	6502 B5	6808 A7	7500 B5	7804 A9	9811 A8	9910 A7	9920 A9	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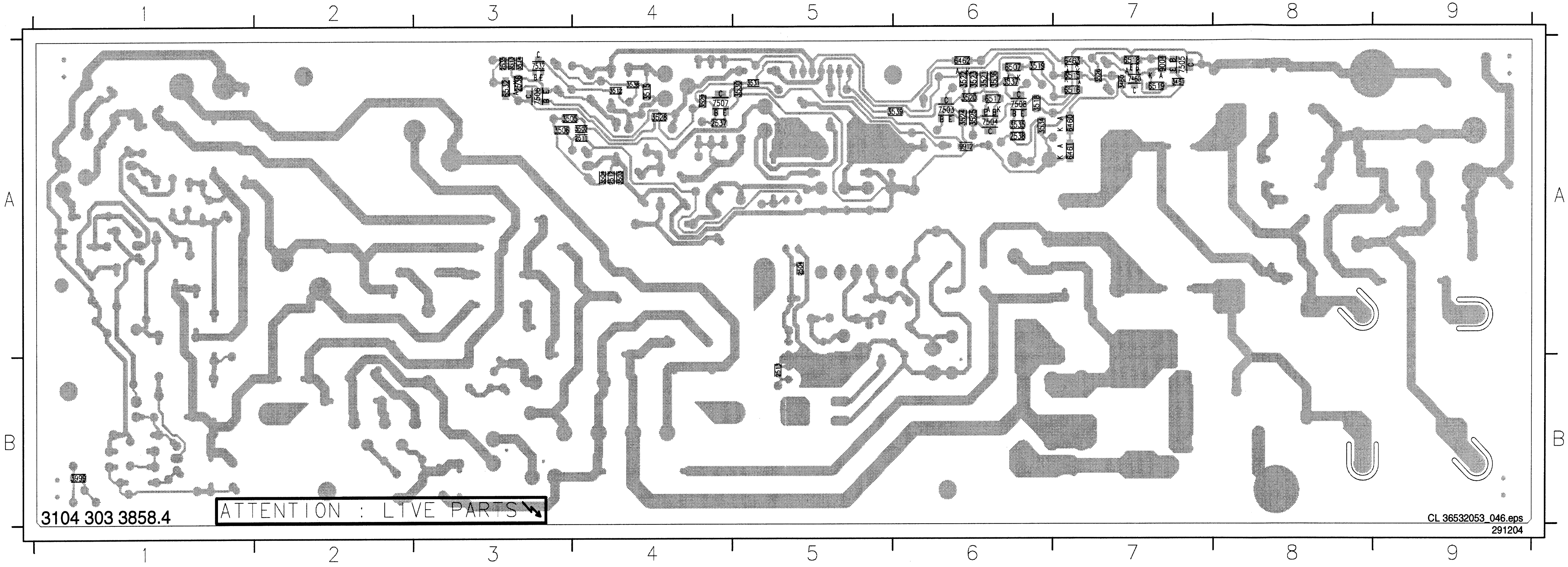
2
3
4
5
6
7
8
9
A
B
3104 303 3858.4
ATTENTION : LIVE PARTS
PHILIPS
2402
0308
3400
3402
1402
3401
2400
1400
5402
9003
9002
1450
2534
3532
1333
9925
6505
9918
5500
2506
6506
3507
7500
2815
2816
1309
5803
9810
5405
5401
2401
2405
3450
5403
5404
3527
9005
6807
7805
2807
2806
5804
2808
3805
0040
9908
9813
9913
3813
3812
3811
3818

CL 36532053_045.eps
221003

Layout Power Supply Panel (Bottom Side)

2504	A5
2511	A4
2512	A4
2513	B5
2535	A3
2536	A3
2537	A4
2538	A6
3460	A7
3461	A7
3502	A4
3503	A4
3504	A4
3505	A3
3506	A3
3512	A4
3513	A3
3514	A3
3515	A4
3518	A6
3519	A6
3520	A6
3521	A6
3522	A6
3523	A6
3524	A6
3525	A6
3526	A7
3528	A4
3529	A4
3530	A5
3531	A5
3534	A6
3535	A6
3536	A6
3537	A6
3538	A4
3539	A6
3999	B1
6460	A7
6461	A7
6462	A6
6463	A7
6507	A6
6515	A7
6516	A7
6517	A6
6518	A7
6519	A7
6532	A3
7460	A7
7503	A6
7504	A6
7505	A7
7506	A3
7507	A5
7508	A6
7532	A3
9004	A7
9912	A6


1
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3
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B
3104 303 3858.4
ATTENTION : LIVE PARTS
CL 36532053_046.eps
291204

Personal Notes:

E_06532_013.eps
131004

8. Alignments

Index of this chapter:

8.1 General Alignment Conditions
8.2 Hardware Alignments
8.3 Software Alignments
8.4 Option Settings

8.1 General Alignment Conditions

8.1.1 Start Conditions

Perform all electrical adjustments under the following conditions:

- Power supply voltage: 230 V_ac / 50 Hz (± 10 %).
- Connect the set to the mains via an isolation transformer with low internal resistance.
- Allow the set to warm up for approximately 20 to 30 minutes.
- Measure voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply).
  Caution: never use heatsinks as ground.
- Test probe: Ri > 10 Mohm, Ci < 20 pF.
- Use an isolated trimmer/screwdriver to perform alignments.

8.1.2 Initial Settings

Perform all electrical adjustments with the following initial settings (via the "Active Control" button on the RC):

1. To avoid the working of the lightsensor, set "Active Control" to "Off".
2. Set "Smart Picture" to "Natural".
3. Set "Active Display" to "Off"

8.2 Hardware Alignments

8.2.1 24 V_dc Alignment

Align R3026 until the voltage on pin 1 (to 6) of connector 1313 is 24 V_dc +/- 0.1 V (you can measure this voltage easily on jumpers 9004 or 9005 nearby R3026).

8.3 Software Alignments

Put the set in SAM mode (see the "Service Modes, Error Codes and Fault Finding" section). The SAM menu will now appear on the screen. Select ALIGNMENTS and go to one of the sub menus. The alignments are explained below.

Notes:

- All changes must be stored manually.
- If an empty EAROM (permanent memory) is detected, all settings are set to pre-programmed default values.

8.3.1 GENERAL

LUMA GAIN
Fixed setting of "2".

IF AFC
Supply, via a service generator or via off-air, a PAL B/G TV-signal with a signal strength of at least 1 mV and a frequency of 475.25 MHz. Alignment procedure:

1. During the IF AFC-parameter adjustment, one can see OSD feedback on the screen.
2. The OSD feedback can give 4 kinds of messages:
3. The first item (IN/OUT) informs you whether you are in or out of the AFC-window.
4. The second item (HIGH/LOW) informs you whether the AFC-frequency is too high or too low.

Table 8-1 AFC OSD feedback of AFC alignment

AFC-window	AFC-frequency vs. reference
Out	High
In	High
[In]	[Low]
Out	Low

1. Adjust the IF AFC parameter until the **first** value is within the AFC window (= IN).
2. Next, adjust the IF AFC parameter until the **second** value is LOW.

IF LPRIME AFC
Same procedure as described above, but with other signal source (SECAM L').

TUNER AGC

1. Connect the RF output of a video pattern generator to the antenna input.
2. From the generator, input a PAL B/G TV signal with a signal strength of approximately 2 mV and a frequency of 475.25 MHz.
3. Measure the DC voltage on pin 1 of the (main) Tuner. You can adjust this voltage by adjusting the TUNER AGC item in the SAM menu. Alignment is correct when the DC voltage is just below 3.5 V.

BLEND INTENSITY
Use this alignment when you replace the microcontroller, NVM or the EBILD. It aligns the level of transparency of the menu-picture blended into the main-picture.
Fixed setting “16”.

FBX TESTPATTERN
This function makes it possible to generate a test pattern varying from full black to full white in eight steps. You can use this pattern to check the video path, starting at the FBX to the plasma display. The pattern is generated by the Eagle (IC7724) for PixelPlus sets, or by the PICNIC (IC7713) for non-PixelPlus sets.

Note: This test pattern can also be very useful for checking the display for pixel failures.

8.3.2 2FH ADC ALIGNMENT

Only necessary to align, when the EPLD or NVM is replaced. Use the default values as mentioned in the table.

Table 8-2 2fH ADC alignment

Menu item	Alignment value
RED GAIN RGB	111
BLUE GAIN RGB	117
GREEN GAIN RGB	157
RED OFFSET RGB	59
BLUE OFFSET RGB	52
GREEN OFFSET RGB	46
RED GAIN YPBPR	111
BLUE GAIN YPBPR	117
GREEN GAIN YPBPR	137 ("GREEN GAIN RGB" minus "20")
RED OFFSET YPBPR	59
BLUE OFFSET YPBPR	52
GREEN OFFSET YPBPR	46

8.3.3 OSD CLAMPING

Not necessary to align, set all values to "0".

8.3.4 LUM. DEL.

With this Luminance Delay alignment, you place the luminance information exactly on the chrominance information (brightness is pushed onto the colour). Use a colour bar / grey scale pattern as test signal.

- **LUM. DELAY PAL BG:** Apply a PAL BG colour bar / grey scale pattern as a test signal. Adjust this parameter until the transients of the colour part and black and white part of the test pattern are at the same position. Default value is "9".
- **LUM. DELAY PAL I:** Apply a PAL I colour bar/grey scale pattern as a test signal. Adjust this parameter until the transients of the colour part and black and white part of the test pattern are at the same position. Default value is "9".
- **LUM. DELAY SECAM:** Apply a SECAM colour bar/grey scale pattern as a test signal. Adjust this parameter until the transients of the colour part and black and white part of the test pattern are at the same position. Default value is "11".
- **LUM. DELAY BYPASS:** apply a NTSC colour bar/ greyscale pattern as a test signal. Adjust this value until the transients of the colour and black and white part of the test area are at the same position. Default value is "10".

8.4 Option Settings

8.4.1 Introduction

The microprocessor communicates with a large number of I2C ICs in the set. To ensure good communication and to make digital diagnosis possible, the microprocessor has to know which ICs to address. The presence / absence of these specific ICs (or functions) is made known by the option codes.

Notes:

- After changing the option(s), save them with the STORE command.
- The new option setting is only active after the TV is switched "off" and "on" again with the Mains switch (the EAROM is then read again).

8.4.2 DEALER OPTIONS

Table 8-3 Dealer Options Overview

Menu name	Subjects	Options	Physically in set
Personal Options	Picture Mute	Yes	Picture mute active in case no picture detected
		No	Noise in case of no picture detected
	Virgin Mode	Yes	TV starts up (once) with language selection menu after mains switch "on" for the first time (virgin mode)
		No	TV does not starts up (once) with language selection menu after mains switch "on" for the first time (virgin mode)
	Auto Store Mode	None	Autostore mode disabled (not in installation menu)
		PDC-VPS	Autostore mode via ATS (PDC/VPS) enabled
		TXT page	Autostore mode via ACI enabled
		PDC-VPS-TXT	Autostore mode via ACI or ATS enabled
	TXT Preference	TOP	Preference to TOP Teletext
		FLOF	Preference to FLOF Teletext

8.4.3 SERVICE OPTIONS

Select the sub menu's to set the initialisation codes (options) of the set via text menus.

Table 8-4 Service option overview

Menu-item	Subjects	Options	Description
Chassis/Region	Region	AP	Only for AP.
		Europe	Only for Europe
Teletext	Flash RAM	Yes	Flash RAM present
		No	Flash RAM not present
	NexTView	None	Feature not present
		Textguide only	Feature present, but only as text guide.
		Nextview 2	Feature present, for countries that support this.
		Nextview 2c3	Feature present, for countries that support this.
Display Options	Display Technology	LCD	"Grayed out" in menu, fixed value.
	Size	30"	Panel size (in inches).
		42"	Panel size (in inches).
	Display type	16:9	Widescreen screen format.
		4:3	"Classic" screen format.
Video Repro	Featurebox type	Falconic	No "Eagle" present (only "Natural Motion").
		Eagle	"Eagle" present (Pixel Plus).
	Lightsensor	Yes	Feature present.
		No	Feature not present.
	2D Combfilter	Yes	Feature present.
		No	Feature not present.
	Picture improvement	Yes	LTP (TOPIC) present.
		No	LTP (TOPIC) not present.
	Signalling bits	Yes	For 16:9 sets
		No	For 4:3 sets
Audio Repro	AVL	Yes	Automatic Volume Limiter, available in menu.
		No	Automatic Volume Limiter not available in menu.
Miscellaneous	Home Cinema	Yes	Set with Home Cinema Link (EU only).
		No	Set without Home Cinema Link
	Integrated RC	Yes	Feature present.
		No	Feature not present.
	Tuner type	UV1316	Set with Philips tuner.
		TEDE9	Set with Alps tuner.
	P50 DVD menu line	Yes	Sets with Home Cinema Link (EU only).
		No	Sets without Home Cinema Link.
	Hotel mode	Yes	Hotel mode on
		No	Hotel mode off
Option no.	Group 1		Group 1 option code overview (see set sticker).
	Group 2		Group 2 option code overview (see set sticker).

8.4.4 OPT. NO. (Option numbers)

Select this sub menu to set all options at once (expressed in two long strings of numbers).

An option number (or "option byte") represents a number of different options. When you change these numbers directly, you can set all options very quickly. All options are controlled via eight option numbers.
When the EAROM is replaced, all options will require resetting. To be certain that the factory settings are reproduced exactly, you must set both option number lines. You can find the correct option numbers on a sticker inside the TV set (just below the main power supply on the metal frame).

Example: The options sticker gives the following option numbers:

- 20556 24610 49410 00000
- 00022 00001 00034 02752

The first line (group 1) indicates options 1 to 4, the second line (group 2) options 5 to 8 (see tables below).
Every 5-digit number represents 16 bits (so the maximum number will be 65536 if all options are set).
When all the correct options are set, the sum of the decimal values of each Option Byte (OB) will give the option number.

Service tip: An easy way to check the option numbers is:

1. Convert the decimal option number (as given on the options sticker) to a binary number (e.g. by means of the 'scientific' calculator that comes with MS Windows™). E.g. OB3= 49408 (dec)= 1100000100000000 (bin)
2. Use this binary number to check against the bits as mentioned in the tables below. This means in above-mentioned sample, that Bit 8, 14, and 15 are "1" (means "set"), and that the rest is "0". So, actually this means that the options "Aspect Ratio" (Bit 8), "Home Cinema" (Bit 14), and "Integrated RC" (Bit 15) are set for this particular model.

Table 8-5 Option bytes Group 1

Byte nr.	Bit nr.	Decimal value	Option name	Settings (in decimal values)		Option Byte value
OB1	0	1	Featurebox	0= None (n.a.)	2= Prozonic (n.a.) 3= Eagle 4= Falconic (n.a.) 5= Falconic+ (n.a.)	OB1= sum of the "on" bits (decimal)
	1	2				
	2	4				
	3	8	2D Comb Filter	0= Off	8= On	
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	Light Sensor	0= Off	64= On	
	7	128	Luma Trans. Proc.	0= Off	128= On	
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	WSS	0= Off (US/LA/AP-N)	4096= On (EU/AP-P)	
	13	8192	3D Comb Filter	0= Off (EU/AP-P)	8192= On (US/LA/AP-N)	
	14	16384	n.a.	0		
	15	32768	n.a.	0		
OB2	0	1	n.a.	0		OB2= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	Virtual Dolby	0= Off (Dolby prologic)	32= On	
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	Flash RAM	0= Off	8192= On	
	14	16384	EPG Type (EU only)	0= Type2	16384= Textguide only 32768= NextTView 2C3 49152= NexTView 2	
	15	32768				
OB3	0	1	n.a.	0		OB3= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	Aspect Ratio	0= 4:3	256= 16:9	
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	n.a.	0		
	14	16384	Home Cinema	0= Off (US/LA/AP)	16384= On (EU)	
	15	32768	Integrated RC (P50)	0= Off (US)	32768= On (EU/LA/AP)	
OB4	0	1	n.a.	0		OB4= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	n.a.	0		
	14	16384	n.a.	0		
	15	32768	n.a.	0		

Notes:- n.a.= not applicable.- AP-P= Asian Pacific PAL-multi, AP-N= Asian Pacific NTSC, EU= Europe, LA= Latin America, US= NAFTA.

Table 8-6 Option bytes Group 2

Byte nr.	Bit nr.	Decimal values	Option name	Settings (in decimal values)		Option Byte value
OB5	0	1	n.a.	0		OB5= sum of the "on" bits (decimal)
	1	2	Auto Store Mode	0= None (US/LA/AP-N)	2= PDC/VPS (EU) 4= TXT Page (EU) 6= PDC/VPS/TXTpage (EU)	
	2	4				
	3	8	n.a.	0		
	4	16	Picture Mute	0= Off	16= On	
	5	32	n.a.	0		
	6	64	Virgin Mode	0= Off	64= On	
	7	128	Hotel Mode	0= Off	128= On	
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	TXT Preference	0= TOP	4096= FLOF	
	13	8192	n.a.	0		
	14	16384	n.a.	0		
	15	32768	n.a.	0		
OB6	0	1	P50 DVD menu-line	0= Off (US/LA/AP)	1= On (EU)	OB6= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	Region	0= EU	16= AP PAL-multi 32= AP NTSC 48= US	
	5	32				
	6	64				
	7	128				
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	n.a.	0		
	14	16384	n.a.	0		
	15	32768	n.a.	0		
OB7	0	1	n.a.	0		OB7= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	n.a.	0		
	9	512	n.a.	0		
	10	1024	n.a.	0		
	11	2048	n.a.	0		
	12	4096	n.a.	0		
	13	8192	n.a.	0		
	14	16384	n.a.	0		
	15	32768	n.a.	0		
OB8	0	1	n.a.	0		OB8= sum of the "on" bits (decimal)
	1	2	n.a.	0		
	2	4	n.a.	0		
	3	8	n.a.	0		
	4	16	n.a.	0		
	5	32	n.a.	0		
	6	64	n.a.	0		
	7	128	n.a.	0		
	8	256	Picture tube size	0= 30 inch	256= 32 inch 512= 37 inch 768= 42 inch	
	9	512				
	10	1024				
	11	2048				
	12	4096	Display type	0= LCD	4096= PDP	
	13	8192				
	14	16384	n.a.	0		
	15	32768	n.a.	0		

Notes: - n.a.= not applicable.- AP-P= Asian Pacific PAL-multi, AP-N= Asian Pacific NTSC, EU= Europe, LA= Latin America, US= NAFTA.

9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

Index of this chapter:

9.1 Introduction
9.2 Block Diagram
9.3 Power Supply
9.4 Input/Output (I/O)
9.5 Video Processing
9.6 Audio
9.7 Synchronisation
9.8 Control
9.9 Protections
9.10 LCD Panel
9.11 Software Upgrading
9.12 Abbreviation list
9.13 IC Data Sheets

Notes:

- Only **new** circuits (circuits that are not published recently) are described.
- For the other "known" circuits, see:
  - EM5E manual. This manual is available under number 3122 785 12560 (= English).
  - EM6E manual. This manual is available under number 3122 785 13070 (= English).
  - FM24 manual. This manual is available under number 3122 785 12770 (= English).
- Figures can deviate slightly from the actual situation, due to different set executions.
- For a good understanding of the following circuit descriptions, please use the diagrams in chapter 6 and 7. Where necessary, you will find a separate drawing for clarification.

9.1 Introduction

The FTL13 is a 30-inch integrated LCD flat screen set, which uses the EM6 small signal panel. The HOP part is replaced by an Erasable Programmable Logic Device (EPLD).
This chassis has no PIP, no FDW, and no TXT-DW. Also, features like Dolby, DVD-loader, HDD, and/or radio are not present.

9.1.1 Features

This chassis has the following (new) features:

- Next step "Active Control" with: two new bars ("Motion" and "Tint Control" bar), four split demos, etc.
- New LLC power supply, based on the one used in the plasma monitors (FMxx chassis)
- Small Signal Panel (SSP) that is based on the existing EM6 architecture: a full panel with integrated (shielded) Feature Box as in the former MG-chassis. This approach gives better EMC / crosstalk behaviour and less cables.
- Upgradeable main software (via ComPair).

9.1.2 Small Signal Panel

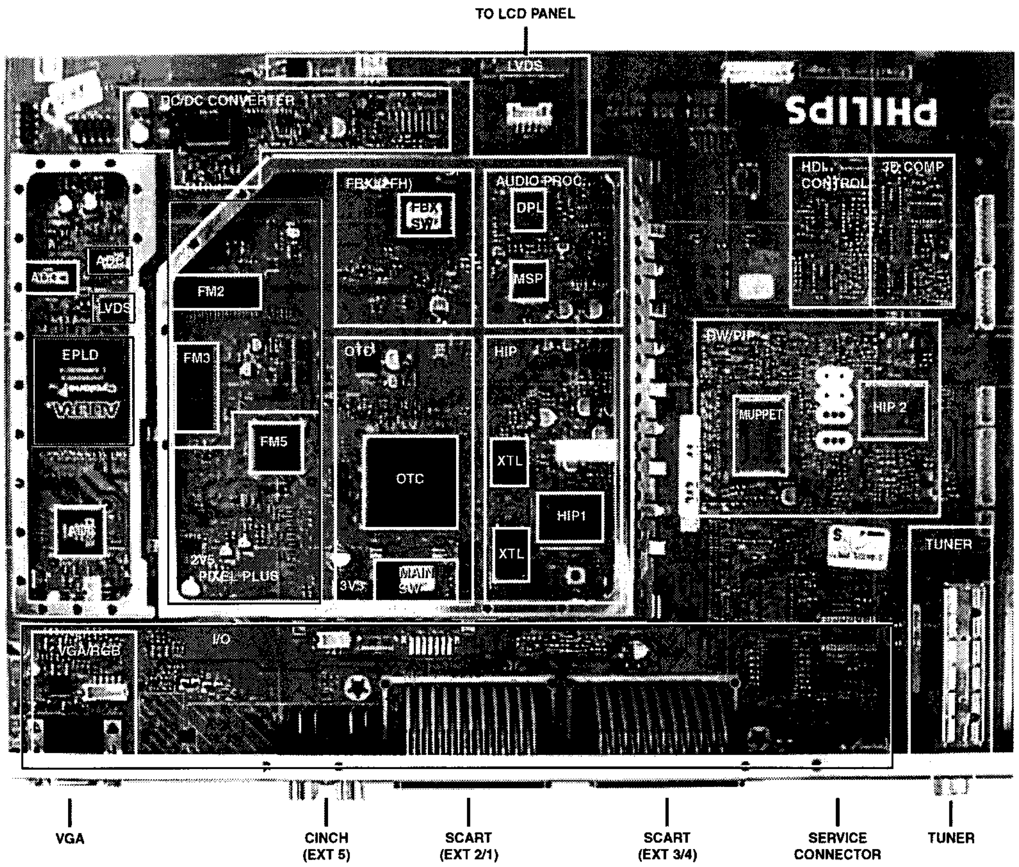
The SSP is a high tech module (four layer, 2 sides reflow technology, full SMC) with very high component density and partial shielding (FBX, EBILD) for EMC-reasons. Despite this, it is designed in such a way, that repair on component level is possible. To achieve this, attention was paid to:

- Clearance around surface mounted ICs (for replacing).
- Detailed diagnostics and fault finding is possible via ComPair.
- Software upgrading is possible via ComPair.

Further features of the SSP are:

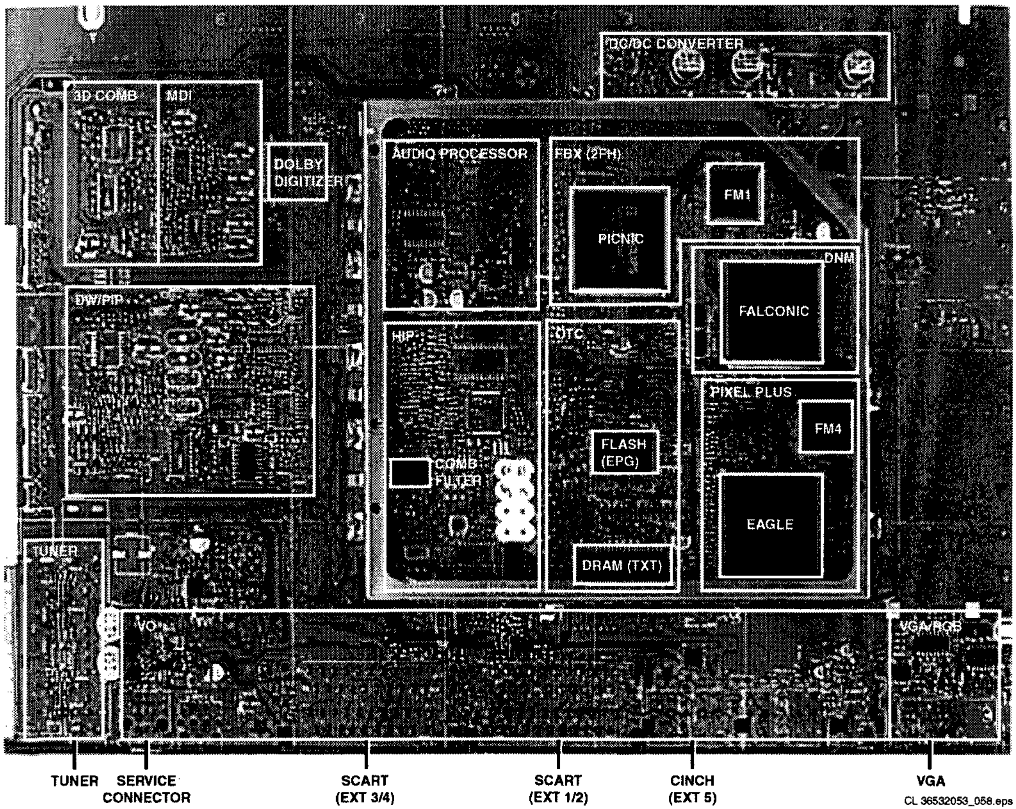
- The 3D Comb filter functionality (for USA) is integrated on the SSP.
- The rear I/O connections (like SCART and cinch) are integrated on the SSP, even as the tuner.
- VGA input (for Europe).
- DVI input (only for USA).

On the photographs you can see where all the functional cells are located on the SSP:


TO LCD PANEL
LVDS
DC/DC CONVERTER
PHILIPS
HDL CONTROL
3D COMP
FBX (1FH)
FBX SW
AUDIO PROC.
DPL
MSP
ADC
AUDIO
LVDS
EPLD
FM2
FM3
FM5
OTC
OTC
HIP
XTL
XTL
HIP1
DW/PIP
MUPPET
HIP 2
TUNER
2V5
PIXEL PLUS
3V3
MAIN SW
VGA/RGB
I/O
VGA
CINCH (EXT 5)
SCART (EXT 2/1)
SCART (EXT 3/4)
SERVICE CONNECTOR
TUNER

CL 36532053_057.eps
110703

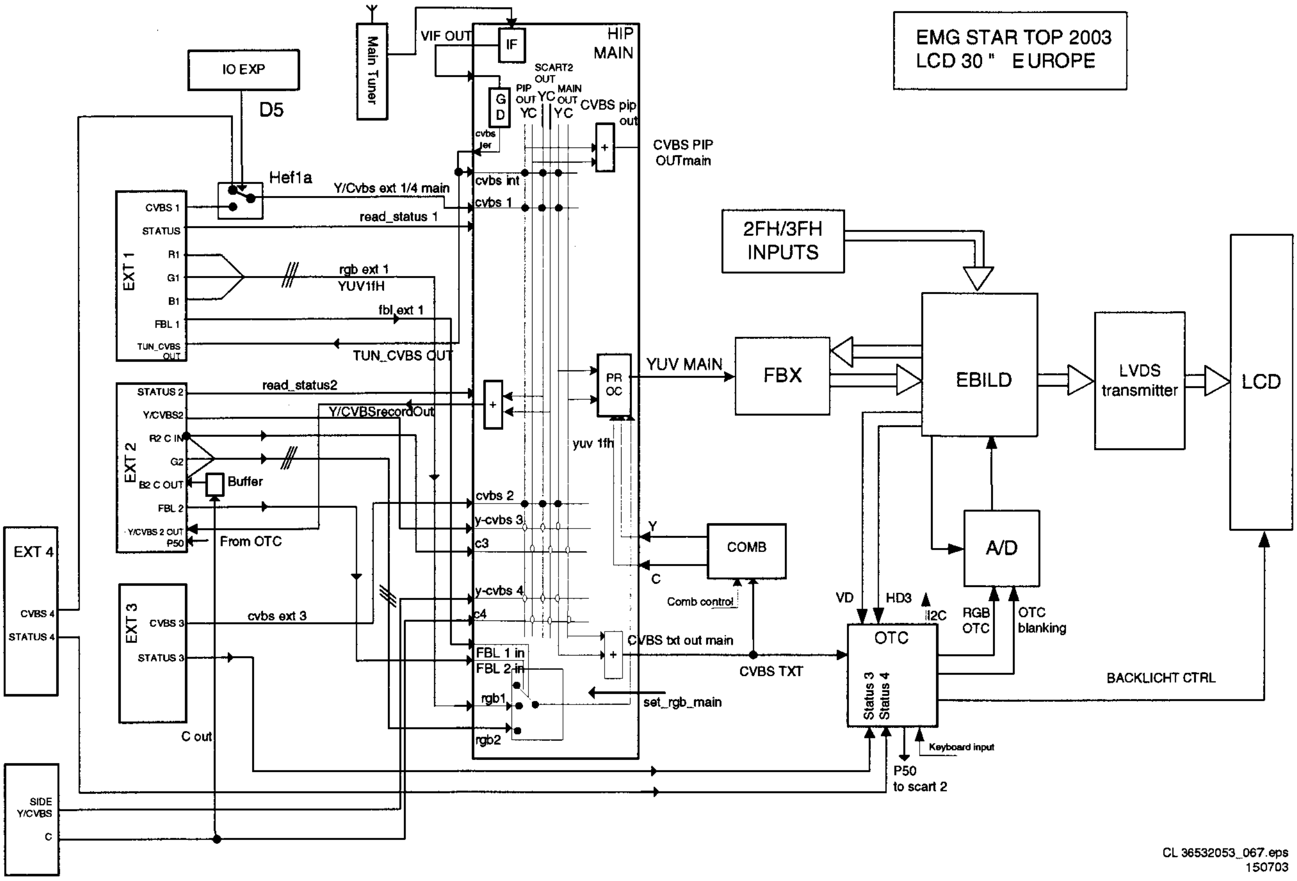
Figure 9-1 SSP top view


DC/DC CONVERTER
3D COMB
MDI
DOLBY DIGITIZER
AUDIO PROCESSOR
FBX (2FH)
FM1
PICNIC
DNM
FALCONIC
DW/PIP
HIP
COMB FILTER
OTC
FLASH (EPG)
DRAM (TXT)
PIXEL PLUS
FM4
EAGLE
TUNER
I/O
VGA/RGB
TUNER
SERVICE CONNECTOR
SCART (EXT 3/4)
SCART (EXT 1/2)
CINCH (EXT 5)
VGA

CL 36532053_058.eps
291204

Figure 9-2 SSP bottom view

9.2 Block Diagram


EMG STAR TOP 2003
LCD 30 " EUROPE
IO EXP
D5
Main Tuner
VIF OUT
IF
HIP MAIN
SCART2 OUT
PIP OUT YC
MAIN OUT YC
CVBS pip out
G D
cvbs ter
CVBS PIP OUTmain
Hef1a
Y/Cvbs ext 1/4 main
cvbs int
cvbs 1
read_status 1
EXT 1
CVBS 1
STATUS
R1
G1
B1
FBL 1
TUN_CVBS OUT
rgb ext 1
YUV1fH
fbl ext 1
TUN_CVBS OUT
EXT 2
STATUS 2
Y/CVBS2
R2 C IN
G2
B2 C OUT
FBL 2
Y/CVBS 2 OUT
P50
read_status2
Y/CVBSrecordOut
Buffer
From OTC
EXT 4
CVBS 4
STATUS 4
EXT 3
CVBS 3
STATUS 3
cvbs ext 3
C out
SIDE Y/CVBS
C
cvbs 2
y-cvbs 3
c3
y-cvbs 4
c4
FBL 1 in
FBL 2 in
rgb1
rgb2
PR OC
YUV MAIN
yuv 1fh
2FH/3FH INPUTS
FBX
EBILD
LVDS transmitter
LCD
Y
C
COMB
Comb control
CVBS txt out main
CVBS TXT
set_rgb_main
VD
HD3
I2C
RGB OTC
OTC blanking
A/D
OTC
Status 3
Status 4
Keyboard input
P50 to scart 2
BACKLICHT CTRL

CL 36532053_067.eps
150703

Figure 9-3 Block diagram FTL13 (Europe version)

The main tuner is a PLL tuner and delivers the IF-signal, via audio and video SAW-filters, to the main HIP (High-end Input Processor). This HIP has the following functions:

- IF modulation.
- Video source select and record select (for 1fH inputs).
- Colour decoder.
- Synchronisation.

The following video input/output connections (with audio connections) are available for Europe:

- Side: interfaces CVBS and Y/C.
- EXT1: interfaces CVBS, RGB-, and YUV-input (1fH)
- EXT2: interfaces CVBS and Y/C (meant for VCR or DVDR connection).
- EXT3: interfaces CVBS.
- EXT4: interfaces CVBS.
- AV5: interfaces YPbPr (2fH/3fH).
- AV6: interfaces VGA (2fH/3fH).

The HIP delivers YUV and H/V-sync signals to the PICNIC (in the Feature Box). This IC takes care of:

- Analogue to Digital conversion and vice versa.
- 100 Hz processing
- Interlaced to progressive scan conversion.
- Panorama mode.
- Noise reduction.
- Dynamic contrast.

After the PICNIC, the YUV-signals are fed to the FALCONIC for "Natural Motion", followed by the Eagle for picture enhancement. The processed YUV signals (from Eagle or PICNIC) are, together with the sync-signals from the PICNIC, then fed to the EBILD (Eagle Based Intelligent LCD Driver). This programmed IC handles the video control. The RGB-signals for TXT/CC/OSD (from the uP) are also inserted via this IC. The video part delivers the RGB signals to the LCD-panel.

The sound part is built around an MSP (Multi-channel Sound Processor) for IF sound detection, sound control and source selection. Amplification is done via a "class D" integrated power amplifier IC, the TDA7490.

The microprocessor, called OTC (OSD, TXT/CC and Control) takes care of the analogue TXT input processing and output processing. The OTC, ROM, and RAM are supplied with 3.3 V. This voltage is derived from the +12V via a DC/DC converter on the SSP.
The NVM (Non Volatile Memory) is used to store the settings; the Flash-RAM contains the set software.

The power supply is based upon the one used in the FMxx chassis. It consists of a main supply (based upon the down converter principle) and an auxiliary supply (based upon the so-called LLC technology).
For the power supply of the FBX, a separate DC/DC converter is used, generating 3.3 V.

9.3 Power Supply

9.3.1 Block diagram

The architecture of the power supply is made flexible by separating the different function blocks as much as possible.

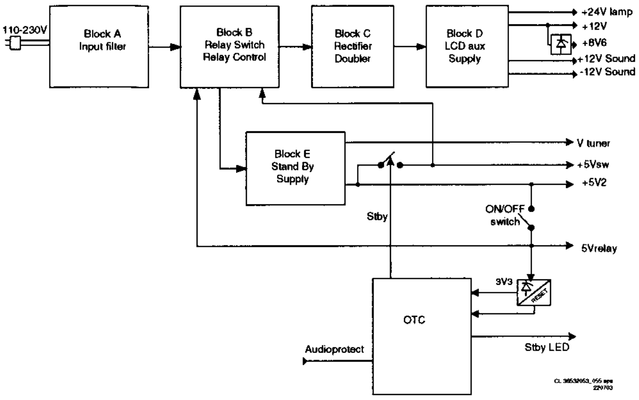


Figure 9-4 Block diagram power supply

Block A

This block contains the mains entrance part together with the filtering. It is supplied directly from the mains cord. The mains input has a polarisation that is requested for the USA together with a polarised mains cord; the neutral of the chassis **must** be connected to the mains neutral in the USA. A non-polarised mains cord is used for Europe and A/P regions.

Block B

This block contains the relay switch and relay control. The relay switches the mains voltage to the rectifier and doubler (for USA). The relay is powered by the +5V2_RELAY and driven by the +5V_SW. This voltage is derived from the +5V2 and is driven by the STAND_BY line (this line is active "low" in the "Semi-standby" and the "On" state.

Block C

This block contains the mains rectifier and doubler (for USA). The mains voltage is rectified and for USA sets it is doubled (see description below).

Rectifier/Doubler

The circuit involves component 7805 (Sanken STR83145) that senses the AC input voltage. This device also includes a thyristor.
If the voltage is less than 140 V_ac, the 7805 thyristor switches "on", and the combination (rectifier + closed switch) acts as a voltage doubler (sum of voltages over C2815 and 2816).
If the voltage is above 149 V_ac, the 7805 thyristor stays open and we have a classical rectification.

Notes:

- In order to prevent accidental problems with voltage overshoot or sink, once the thyristor goes open, it cannot be closed, unless the mains voltage is back to zero.
- Resistors 3806, 3807, 3808, 3810, 3811, and 3812 are present in order to allow the discharge of capacitors 2815 and 2816 in case of no-load condition (e.g. load not connected).

Protection

If the voltage on one (or both) of the two main electrolytic capacitor's (C2815, C2816) becomes too high (in case of over voltage for instance), the circuit goes into protection. Let us take the case of an over voltage on C2816:
If the voltage across 2816 exceeds 460 V_dc, the voltage across 3810 becomes more than 15.7 V (via divider 3810/3811/3812). This implies that transistor 7802 goes into conduction. This will activate transistor 7803. The emitter of this transistor is connected to the gate of thyristor 7804. When 7803 conducts, then 7804 goes into conduction between the live AC line and the DC ground. The high current flow will immediately blow fuse 1400.

Block D

This block contains an LLC supply. The output voltages are +12V, which delivers +8V6, the +24V for the LCD lamps, and the +12V_SOUND and -12V_SOUND. The relay switch controls the supply for this block (see also description of block B).

Note: See FM24 service manual for a more detailed description.

Block E

This block contains the Standby supply. This supply gives a stabilised +5V2 output. The +5V2 is connected to the ON/OFF switch and delivers the +5V_RELAY to the SSP and to the relay when the functional switch is "on". The 3V3 supply for the OTC, ROM, and RAM are derivations from the +5V_RELAY via a stabiliser on the SSP. A reset circuit resets the OTC as long as the +5V2 is not stabilised.
When the ON/OFF switch is switched "off":

1. The relay is switched "off"
2. The OTC is reset
3. The standby line becomes "high"
4. The main supply is switched "off".

The V_TUN (50 V stabilised, on SSB to 33V) is a secondary voltage of the stand by supply.

Note: See FM24 service manual for a more detailed description.

Block OTC

The OTC controls the supply. The OTC is powered by the 3V3 derived from the +5V2, and is powered when the ON/OFF switch is "on". In standby, the STANDBY line disconnects the +5V_SW from the +5V2, and the relay is switched "off".
In "Semi-standby" or "On" state, the STANDBY line is "low" and the +5V_SW is connected. The relay is activated, and the main supply can start up.

Block POR (Power On Reset)

The POR mutes the audio output amplifier and switches "off" the lamps. After a POR, the software must start the set. There must be a delay of 1 s after switching "off" (the lamps needs this delay).
The OTC receives the POR signal via input pin 99 (P1-6/INT3). This POR signal is generated in the following cases:

- When the standby supply (+5V2) starts up (this is when the mains cord is connected).
- By switching "off" the ON/OFF switch (as long as the switch is "off").
- When the main voltage drops.

9.3.2 DC/DC Converter (diagram B12)

This circuit on the SSP provides the 3V3 voltage for the Feature Box and PIP/DW (if present).
A DC/DC converter has the following advantages:

- The DC/DC converter is directly on the SSB near the circuits that needs to be powered with the 3.3 V.
- Circuits in the FBX and the DW part needs some high current by low voltage, so, there is no risk to have power dips or voltage loss in connections between the LSP and the SSB panel.

The circuit used is a so-called "synchronous buck converter". Some characteristics:

- Input parameters: 12.5 V / 330 mA.
- Output parameters: 3.42 V ± 0.15 V / 1.2 A.
- Switching frequency: approx. 60 kHz.
- Efficiency: approx. 90%.

- Inhibit (+5V) and fast turn-off (3V3_FAULT) control inputs.

Block diagram

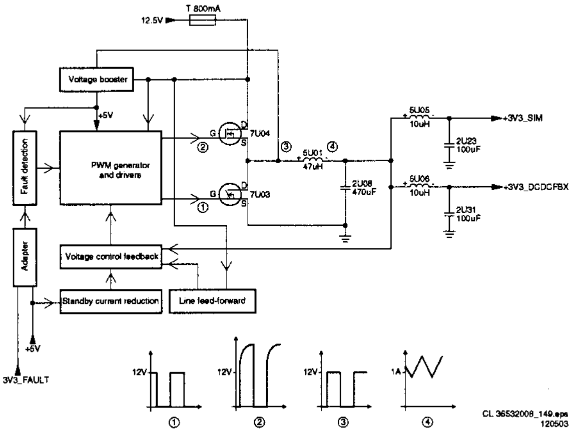


Figure 9-5 Block diagram DC/DC converter.

Advantage to use a "synchronous buck converter" instead of a "classical buck converter" is a better efficiency (about 90%). The difference between the two is that in a synchronous buck converter the "low -side" diode is replaced by a MOSFET (item 7U03). This, because the voltage drop across the MOSFET is smaller than the forward voltage drop of the diode. This second MOSFET conducts current during the "off" times of the first MOSFET (at the input side). The upper MOSFET conducts to transfers energy from the input to the inductor and load, while the lower MOSFET conducts to circulate the inductor current. The synchronous PWM control block regulates the output voltage by modulating the conduction intervals of the upper and lower MOSFETs.

PWM Generator and Drivers

This circuit is build around transistors 7U01, 7U02, 7U08, 7U09, and the associated components. MOSFETs T7U04 and T7U03 are the switching transistors, they are conducting alternatively.

- Time sequence 1: T7U04 is conducting; energy is stored in coil 5U01. The current is flowing from the +11V power supply source.
- Time sequence 2: T7U04 is blocked; energy is stored in coil 5U01.
- Time sequence 3: T7U03 is conducting, and the current circuit is now closed via T7U03, Coil 5U01, C2U08, and the load. So the energy stored in the coil during time sequence T1 is consumed during sequence T3. The signal on the gate T7U03 is 180 degrees turned compared with the signal on the gate T7U04.

The principle of operation of the PWM generators and drivers is an astable circuit, whose frequency is mainly given by the values of capacitor 2U32 and resistor 3U03. Capacitors 2U05, 2U27, and 2U28 form a capacitive voltage divider to limit the negative peak voltage on the base of transistor 7U09 at about 3 V. The same role have the capacitors 2U09 and 2U12 for the transistor 7U08.
The resistor 3U14 and the capacitor 2U30 introduce a small dead time between switching "off" of transistor 7U03 and switching "on" of transistor 7U04 to prevent cross-conduction through them.
The capacitors 2U07, 2U16, and 2U18 speed-up the switching of the astable circuit. This circuit is blocked in "off" state (7U02 and 7U08 saturated and 7U01 and 7U09 blocked) when the transistor 7U11 is conducting.
This happens when either +5V has a low value (below 2 V), the boost voltage drops below its minimum value, or the 3V3_FAULT signal is low (below 1 V) for more than 20 ...30 ms.

Voltage Booster

This circuit is build around capacitors 2U03, 2U04, 2U05, resistor 3U51, and diodes 6U03 and 6U04.
It generates the boost voltage (approx. +20 V) for supplying the "high-side" driver transistor for the power MOS-FET 7U04. The voltage is generated only during normal operation of the converter; therefore, any drop in its value means an internal fault condition, which is sensed by the internal protection circuit.
The A.C. component of the voltage on the source of transistor 7U04 is rectified by diodes 6U04 and 6U03 and added to the input voltage, resulting into the boost voltage. The resistor 3U51 limits the peak current through the rectifier diodes to about 300 mA.

Voltage Control Feedback

This circuit keeps the output voltage constant when the input voltage and/or the output current vary. It is build around transistors T7U06-A, T7U06-B, T7U05, diode D6U07, and associated components.
A 6.9 V reference voltage is provided by zener diode D6U07 (via T7U15). Transistors T7U05 and T7U06A are comparators. E.g. if the voltage on the base of T7U06-B increases, T7U06-B and T7U08 will conduct more, and via T7U08 the conducting time of T7U04 will be reduced, resulting in a decreasing output voltage.

Linefeed Forward

This circuit (resistor 3U46) improves the line regulation factor.

Stand-by Current Reduction

This circuit is build around transistors 7U14 and 7U15. It cuts the quiescent current through the reference zener diode 6U07 in stand-by mode.

Adapter

This circuit is necessary for having proper start-up/shut-down operation of the converter at various shapes of the +5V voltage.

Fault detection

In "on" mode, transistors 7U12, 7U10, 7U07, and 7U13 are conducting and the transistor 7U11 is blocked.
In protection mode, transistors 7U11, 7U07, and 7U13 are conducting (provided that the "+5V" voltage is higher than 4.5 V) and transistors 7U10 and 7U12 are blocked.
During start-up, the protections are bypassed for a short time (tenths of ms) by capacitors 2U22 and 2U20.

+20V Detection

This circuit detects the boost voltage, and is build around transistor 7U12, diode 6U10, and associated components. If the boost voltage is lower than 15 V, transistors 7U12 and 7U10 are blocked, 7U11 is conducting, so via diodes 6U08 and 6U09 the PWM and Driver circuit is switched "off".
It is also the case when the input voltage "+11V" is less than about 10 V (the under-voltage lock-out function).

+3V3 Detection

If the +3.3V and +5V are present, C2U26 is charged. Transistor T7U10 conducts, T7U11 is blocked, and the PWM and Driver circuit is working.
If there is a voltage drop on the +3.3V, the voltage on C2U25 cannot be maintained, resulting that T7U10 will block and the PWM and driver circuit will be switched "off".

+5V Detection

The same situations if the +5V drops: T7U07 and T7U13 will block, the reference voltage on R3U41 will drop, and a switch "off" of the PWM and Driver circuit is the result.
Diode 6U06 is foreseen to clamp the output voltage to 5 V in case of fault conditions (like 7U04 short-circuited D-S). The fuse 1U01 will open in such conditions.

Role of Other Components

- The capacitors 2U06 and 2U10 are filtering the ripple current generated by the commutation of power MOS-FET 7U04 (about 700 mA_rms, while the capacitor 2U08 is filtering the output voltage.
- Coil 5U02 and capacitor 2U15 prevent that noise generated by the switching will disturb other circuits supplied from +11V.
- Coils 5U05 and 5U06 and capacitors 2U23 and 2U31 are supplementary filtering of the output voltage for the two load circuits (PIP and Feature Box).
- Beads 5U03 and 5U04 damp oscillations during the switching of the power MOS-FETs.
- Components 2U01, 2U02, and 6U02 are not present (the voltage "+3V3-ILINK" is not used).

Service Tips

- When a power MOS-FET is found defective, replace the other power MOS-FET, the fuse 1U01, and the diode 6U06 as well.
- When a driver transistor (7U01, 7U02, 7U08, or 7U09) is found defective, replace the complementary transistor as well (example: replace also 7U08 if 7U02 is defective).
- For a normal operation of the converter, it is important to check the switching frequency, the value of the boost voltage, and the amplitude of the gate voltage of transistor 7U04 (it should be close to the boost voltage).

9.3.3 Power Balance

The total output power is max. 160 W.

Table 9-1 Total power balance overview

Voltage	Value	Current	P_max
5V2	5.2 V	0.6 A	3.18 W
8V6	8.6 V	0.5 A	4.3 W
+12V_sound	12.3 V	0.24 A continue, 0.81 A peak	3 W continue, 10 W peak
-12V_sound	12.3 V	0.24 A continue, 0.81 A peak	3 W continue, 10 W peak
V_tune	50 V	4 mA	0.1 W
12V	12.3 V	0.9 A	11 W
24V_lamp	24 V	5 A	120 W
Total			160 W peak

9.3.4 Switch On/Off

The set can be switched "on" or "off" via the ON/OFF knob, or by (dis)connecting the mains power cord to the power socket with the ON/OFF knob "on".

9.3.5 Power States

There are four different power states. Some characteristics of these are summarised in the "Power states" table.

Table 9-2 Power states overview

Power state	On/Off switch	Remarks
OUT (mains-cord disconnected)	X	No power
OFF	OFF	Only standby supply is working OTC not powered Main supply not workingNo LED is "on"
STAND BY (1)	ON	Standby supply is workingRed LED is "on" (in Europe and in US)
SEMI STAND BY	ON	Standby supply is workingMain supply is working LCD and LCD-lamps are not active EPG loading and P50 recording possible (Europe) Time extraction (Europe and US)Red and Green LEDs are "on"
ON	ON	The set is workingGreen LED is "on" (in Europe and in US)

Events from OFF to SEMI-STANDBY or ON

(See also figure "Step wise start-up diagram" in chapter "Service Modes, Error Codes, and Fault Finding").

1. The set is in "off" state until the ON/OFF switch is switched to "on". The standby supply starts, +5V2 becomes present, the OTC resets, the I/O pins are initialised, and the watchdog is enabled. The set comes in standby mode.
   - The sets leaves the stand by mode if:
   - A time extraction must be started (after every start up).
   - A P50 recording has to start.
   - An EPG loading has to start.
   - The Standby bit is set to "off"; when a user switches on the set, the standby bit is also set to "off".
2. To ensure a quick start-up of the set, the hardware start-up of the set should start within 500 ms after an OTC reset is received, or within 250 ms after a "leave stand by" commando is received. The total initialisation should be finished at least within 1500 ms after the OTC reset.
3. The STANDBY line is set to "low", the +5V_SW is "on", the relay closes, and the LCD AUX supply starts up (8V6 is present).
4. The rest of the ICs are initialised. The EBILD is initialised min 400 ms after the standby line is set to "low".
5. If the standby bit was set, the set goes into semi-standby until:
   - The time extraction is done.
   - The P50 recording has finished.
   - The EPG loading has finished.
6. If the standby bit was not set, the LCD is switched "on" via the EBILD.

Events in SEMI-STANDBY

1. The set can be in semi-standby during Time extraction, EPG loading, or P50 (Easylink) recording. The semi-standby state is ended when:
   - Time extraction has finished.
   - P50 recording has finished.
   - EPG loading has finished.
   - A P50 recording starts during EPG loading.
   - A user event "On" or "Standby".
   - The set goes into protection.
2. If the standby bit is not set (after user event), the LCD is switched "on".
3. If a P50 recording or an EPG loading has to start, the set stays in semi-standby. If the P50 recording has to start during EPG loading, the P50 has priority.

4. If there is no P50 recording or EPG loading, the set goes to standby.

Events from ON to SEMI-STANDBY/STANDBY

1. The set can be switched to standby:
   - Via the RC (to semi-standby).
   - Via the MENU button on the top control, long press (to semi stand by).
   - Via a protection (to standby).
2. The running instructions are finished.
3. The LCD is switched "off"; this is controlled by the EBILD. First, the +24V power is switched "off", and then the power supply to the LCD is switched "off".
4. Sound is muted
5. If there was a protection, the STANDBY line is put "high", and the set goes to standby.
6. If there was no protection, the set goes to semi-standby.
7. After an event in semi-standby, the set goes to standby.
8. Protections are disabled.
9. The OTC sets the STANDBY line "high", this switches "off" the main power supply, and only the standby supply remains working.
10. The set is in standby.

9.4 Input/Output (I/O)

9.4.1 Introduction

The chassis follows the standard SCART specification:

- The presence of the incoming source is detected via pin 8 of the SCART signal.
- The Aspect Ratio of the incoming source is derived from the voltage level on SCART pin 8. The pin 8 information is handled by the HIP for SCART 1 and 2 and by the OTC for SCART 3 and 4
- The P50 in/out is handled via P1-4 and P3-7 of the OTC.
- RGB sources break in with an additional fast blanking signal that is detected by the HIP. The HIP then internally chooses other signal processing. RGB sources that only have fast blanking and no pin 8 status do not overrule the main TV source. There is no automatic break in detection for the front input.
- The HIP for further image processing does the detection between Y/C and CVBS automatically.
- When Y/C is detected, the HIP will add Y and C signal to compose CVBS again. This addition should be overruled by software at the moment any Y/C signal is the source and the presence of a P50 Y/C video recorder is detected: only Y signal is directed to record out (C is already hardwired to EXT 2 out).
  Note: P50: Chroma-out is pin 7, Chroma-in is pin 15. Non-P50: both Chroma-out and -in is pin 15 (hardwiring C to pin 7 out; non-P50 not supported).
- The signal on MONITOR_OUT follows the incoming source, except in case the incoming source is EXT2, YPbPr-2fH, or VGA. Then the output signal should be FRONTEND_OUT.

Note: The SCART input (1fH) path is equal to the one described in the EM6E manual. Therefore, it is not described in much detail here.

9.4.2 Input detection

The RGB or YPbPr input signals (2fH/3fH) are sent to the ADC (AD9883A) together with H and V pulses from DVI (USA) or VGA (EUR), and the Y signal from YPbPr called Sync On Green (green is same line as Y). The AD converter:

- Detects via H and V sync, if RGB is present or not.
- Detects via Sync On Green, if YPbPr is present or not.
- Detects the selected sync.
- Selects the sync switch via I2C.
- Does AD conversion to 848 samples per line, 8 bits in 422 format. This means one bus for Y signal with 8 bits and one bus for UV with 4 U and 4 V bits. Depending on the system detected by EBILD, the sample frequency is changed. Via I2C, the "PLL_DIV" signal is given in 11 bits (2 Bytes).

When a 1fH input is detected, the AD converter is set in tristate.

1fH input flow

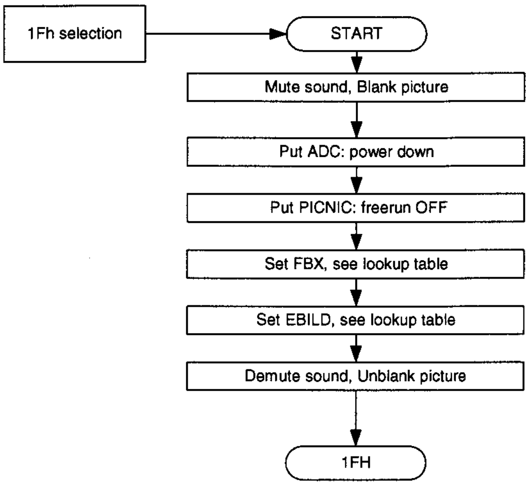

1Fh selection
START
Mute sound, Blank picture
Put ADC: power down
Put PICNIC: freerun OFF
Set FBX, see lookup table
Set EBILD, see lookup table
Demute sound, Unblank picture
1FH

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Figure 9-6 Flowchart 1fH detection

1. If a 1fH selection is done (except for AV4 in USA), the sound is muted and the picture is blanked.
2. The ADC is powered down.
3. The PICNIC is not in free run.
4. Both FBX and EBILD are set in 1fH (see lookup table).
5. Sound is demuted and picture is unblanked.

2fH/3fH input flow

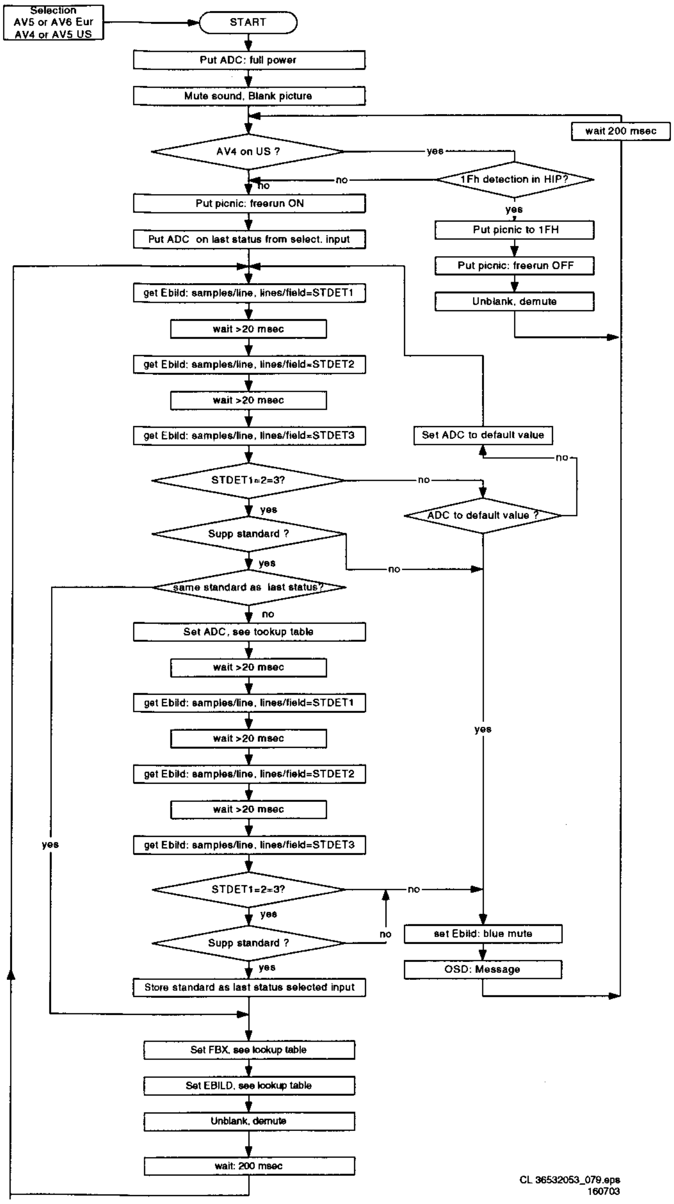
Selection
AV5 or AV6 Eur
AV4 or AV5 US
START
Put ADC: full power
Mute sound, Blank picture
wait 200 msec
AV4 on US ?
yes
no
1Fh detection in HIP?
no
yes
Put picnic: freerun ON
Put picnic to 1FH
Put ADC on last status from select. input
Put picnic: freerun OFF
Unblank, demute
get Ebild: samples/line, lines/field=STDET1
wait >20 msec
get Ebild: samples/line, lines/field=STDET2
wait >20 msec
get Ebild: samples/line, lines/field=STDET3
Set ADC to default value
no
STDET1=2=3?
no
yes
ADC to default value ?
Supp standard ?
yes
no
same standard as last status?
no
Set ADC, see tookup table
wait >20 msec
get Ebild: samples/line, lines/field=STDET1
yes
wait >20 msec
get Ebild: samples/line, lines/field=STDET2
wait >20 msec
yes
get Ebild: samples/line, lines/field=STDET3
STDET1=2=3?
no
yes
Supp standard ?
no
set Ebild: blue mute
yes
OSD: Message
Store standard as last status selected input
Set FBX, see lookup table
Set EBILD, see lookup table
Unblank, demute
wait: 200 msec

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Figure 9-7 Flowchart 2fH/3fH detection

1. The standard detection starts with a 2fH/3fH selection (this is AV5 / AV6 in Europe or AV4 / AV5 in USA).
2. The ADC is full powered (it was powered down in 1fH).
3. The sound is muted and the picture is blanked.
4. On AV4 in USA, an 1fH and 2fH/3fH signal can enter. This detection is done by the HIP. When 1fH is detected, the FBX is set to 1fH, the PICNIC is not in free run, the picture is unblanked, and the sound is demuted. The set is in 1fH state. This state is continues checked, because the input can change from 1fH to 2fH/3fH.
5. If the input is 2fH/3fH, the PICNIC is set to free run
6. The ADC is set to the last status from this selected input, because there is a big chance that the same standard is wanted.
7. The number of samples per line and lines per field is collected from the EBILD. The check is done three times. If the same value is measured within some tolerances (see lookup table) the standard is valid. The time between two measurements must be at least one frame or 20 ms.
8. If the ADC has not the right settings, the PLL does not lock, and the "STDET" measurements do not give the same results. The ADC is set to its default value; this value is able to catch all supported standards. If the ADC is already in the default value and no standard detection is possible, the set changes to blue mute.
9. If the standard is not supported, the set changes to blue mute via the EBILD, and a message is displayed.
10. If the standard is the same as the last status, the ADC is in the correct state, an both FBX and EBILD are set (see lookup table).
11. If the standard is changed, the ADC is set to the detected standard and a new check is done. If the standard is valid and supported, the new standard is stored in NVM as last status.
12. The FBX and EBILD are set (see lookup table)
13. Picture is unblanked and sound demuted.

Table 9-3 I/O Lookup table

Selected Input	Stand-ard	x fH	FBX	ADC	EPLD	Field Rate
Tuner, SC1..SC4, Side I/O	480i	1 fH	PICNIC			
	576i	1 fH	PICNIC			
AV5 (Cinch)	480p	2 fH	EAGLE	YPbPr	YPbPr	60 Hz
	576p	2 fH	EAGLE	YPbPr	YPbPr	50 Hz
	1080i / 60 Hz	2 fH	EAGLE	YPbPr	YPbPr	60 Hz
	1080i / 50 Hz	2 fH	EAGLE	YPbPr	YPbPr	50 Hz
	720p / 60 Hz	3 fH / 720p		YPbPr	YPbPr	
	720p / 50 Hz	3 fH / 720p		YPbPr	YPbPr	
AV6 (VGA)	480p	2 fH	EAGLE		RGB	60 Hz
	576p	2 fH	EAGLE		RGB	50 Hz
	1080i / 60 Hz	2 fH	EAGLE		RGB	60 Hz
	1080i / 50 Hz	2 fH	EAGLE		RGB	50 Hz
	720p / 60 Hz	3 fH / 720p			RGB	
	720p / 50 Hz	3 fH / 720p			RGB	
	VGA	2 fH	EAGLE		RGB	60 Hz
	SVGA	2 fH	EAGLE		RGB	56 Hz
	XVGA	3 fH / 768p			RGB	

9.5 Video Processing

9.5.1 Introduction

Note: The FBX processing part is equal to the one described in the EM6E manual. Therefore, it is not described here (except for some basic info).

There are two diversities (see also figure "Block diagram FTL13" in paragraph "Block Diagram"):

- Europe: 4 SCARTs, a side IO, 1 x 2fH/3fH inputs (YPbPr), and 1 VGA input
- USA: 4 AV inputs1 (AV4 can be 1fH or 2fH/3fH YPbPr, a side IO, and a DVI 2fH/3fH input.

Note: There is also an AP version available. This version has no difference w.r.t. the European version, but comes with extra cables and some different option settings.

Short overview of video processing
The video processing is based on four key functions, being

- The HIP + comb filter (for simple source select and video/ chroma processing).
- The EBILD that takes over the video control functions of the HOP (as used in CRT based sets).
- The FBX configuration consisting of a PICNIC (100 Hz featuring), a FALCONIC (Auto TV featuring), and an EAGLE (motion compensation and "Pixel Plus" processing).
- A 2fH/3fH source selection.

Additionally, the following features are added

- One-chip NEC 3D comb filter (only for USA): this comb filter uses spatial and temporal filtering for the elimination of cross colour and cross luminance components. Not only for vertical lines, but also for stationary diagonal lines. This comb filter only supports the NTSC standard.
- The light sensor measurement required for "Active Control" is done by the OTC.

Basic functionality of HIP

I/O functionality

- The HIP selects the signals entering on 1fH base band. The HIP contains a source select matrix in order to handle a Tuner, three CVBS sources, two Y/C sources, and two RGB inputs (this in fact means one VIF input for tuner, four CVBS inputs with among them two Y/C inputs, and two RGB inputs). The HIP detects by itself whether the source is Y/C or CVBS, and decides how to handle the signal for further image processing. For Record Out, the signal is handled by software: if a P50 SVHS VCR is present and the signal to be recorded is Y/C, an Y/C signal should be passed to the VCR.
- There are also two inputs for the OTC that will handle status detection, other, or more detection. In case of RGB, the fast blanking signal (FBL) determines the break-through of the RGB1/YPbPr signal if activated beforehand by the user. If a YPbPr-1fH connection was done, then it is equally handled by the RGB1 input without using the internal matrix. The HIP delivers the main video output (YUV- 1fH signal) for further image processing and three CVBS outputs, being: CVBS PIP/DS, CVBS_TXT_OUT for comb filter (always following YUV main!) and TXT processing, and the CVBS/Y_RECORD_OUT for EXT2.

IF functionality

- The HIP contains a multi standard IF circuit for video demodulation with AFC functionality, a sound IF amplifier, and an AM demodulator. An extra group delay correction is included.
- Chroma demodulation and video processing
- Sync acquisition, delivering H_A/V_A (Horizontal/Vertical Acquisition) towards FBX.

Basic functionality of EBILD

The EBILD is the interface between the FBX and the LCD screen. Its principal functions are:

- Video control functions of the HOP (Saturation, Contrast, Brightness).
- OSD and TXT insertion with blending.
- Video Matrix (NTSC, ATSC, PAL).
- For matrix displays additional functions like:
  - Contrast reserve (peak limiter),
  - Sync wheel,
  - Dithering (matrix displays are 8 bit),
  - Generation of correct timing for LCD display: lamp/ video.
- I2C and SNERT bus.
- Sync control.
- Odd/Even field detection.
- A/D converter alignment for OSD.
- H Sync generation for OTC.
- Control lines.
- Standard detection.
- Lamp on.
- Handle shifts of VD.
- Suppress H and V pulses in active video.
- Generate a H_REF for PICNIC (1fH) in case of a 2fH/3fH source.

Basic functionality of the OTC

The OTC combines the microprocessor and TXT/OSD functionality; it will also handle some of the status detections. It also takes care of P50 communication.

9.5.2 Video Source Selection

Table 9-4 Video input overview

I/O	Main/Sub	CVBS-in	CVBS-out	Y/C-in	Y/C-out	RGB 1fH+ FBL	YPbPr 1fH	YPbPr 2fH/3fH	RGB 2fH	Status 4/3-16/9	P50
EXT1 SCART	Main	Yes	Yes, frontend	No	No	Yes	No	No	No	Yes	No
	Sub	Yes	n.a.	No	n.a.	No	No	No	No	Yes	No
EXT2 SCART	Main	Yes	Yes, WYSIWYR	Yes	Yes	Yes	No	No	No	Yes	Yes
	Sub	Yes	n.a.	Yes	n.a.	Yes	No	No	No	Yes	Yes
EXT3 SCART	Main	Yes	No	No	No	No	No	No	No	Yes	No
	Sub	Yes	n.a.	No	n.a.	No	No	No	No	Yes	No
EXT4 SCART	Main	Yes	No	No	No	No	No	No	No	Yes	No
	Sub	Yes	n.a.	No	n.a.	No	No	No	No	Yes	No
EXT5 cinch	Main	No	No	No	No	No	Yes	Yes	No	Only video det.	No
	Sub	No	n.a.	No	n.a.	No	Yes	No	No	Only video det.	No
Side	Main	Yes	No	Yes	No	No	No	No	No	No	No
	Sub	Yes	n.a.	Yes	n.a.	No	No	No	No	No	No
VGA	Main	No	No	No	No	No	No	No	Yes	Only video det.	No
	Sub	No	n.a.	No	n.a.	No	No	No	No	n.a.	No

The High Definition Input (HDI) part has two input "ports". Each port consists of a video input and an audio input. The ports are named "VGA" (= AV6) and "AV5" and will be referred to using these names.

The physical connectors for these inputs are:
- **AV5.** Three cinches that can be used for YPbPr with sync on Y and two cinches for analogue Audio (left and right).
- **VGA.** One VGA connector and two cinches for analogue Audio (left and right).

Table 9-5 AV5 (YPbPr) input signals

AV5 Inputs (YPbPr)	System	Field freq. (V)	Line freq. (H)	Remark
576 p	PAL	50 Hz	31.25 kHz	
480 p	NTSC	60 Hz	31.5 kHz	
1080 i	ATSC	60 Hz	33.7 kHz	
1080 i	ATSC	50 Hz	28.125 kHz	
720 p	ATSC	50 Hz	37.5 kHz	FBX is not in signal pad
720 p	ATSC	60 Hz	45 kHz	FBX is not in signal pad

Table 9-6 AV6 (VGA) input signals

AV6 Inputs (VGA)	System	Field freq. (V)	Line freq. (H)	Remark
VGA	640x480	60 Hz	31.5 kHz	
SVGA	800x600	56 Hz	35.1 kHz	
XVGA	1024x768	60 Hz	48.4 kHz	FBX is not in signal pad
576 p	PAL	50 Hz	31.25 kHz	
480 p	NTSC	60 Hz	31.5 kHz	
1080 i	ATSC	60 Hz	33.7 kHz	
1080 i	ATSC	50 Hz	28.12 kHz	
720 p	ATSC	50 Hz	37.5 kHz	FBX is not in signal pad
720 p	ATSC	60 Hz	45 kHz	FBX is not in signal pad

The video signals that can be applied are:
- YPbPr sync on Y, 1080i, 480p, and 576p (AV5).
- VGA (RGB + HV: 640x480-60Hz, 800x600-56Hz) , SVGA, XVGA.

9.5.3 Video Processing

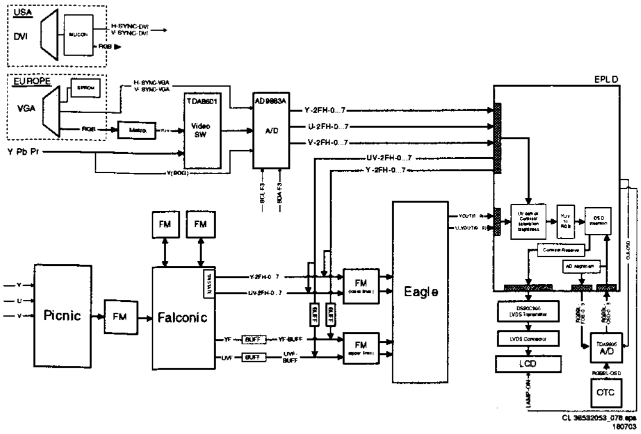
USA
DVI
MUCON
H-SYNC-DVI
V-SYNC-DVI
RGB
EUROPE
EPROM
VGA
H-SYNC-VGA
V-SYNC-VGA
RGB
Matrix
YUV
Y Pb Pr
Y(SOG)
TDA8601
Video SW
AD9883A
A/D
SCL-F3
SDA-F3
Y-2FH-0...7
U-2FH-0...7
V-2FH-0...7
UV-2FH-0...7
Y-2FH-0...7
EPLD
FM
FM
Picnic
FM
Falconic
TRI-STATE
Y-2FH-0...7
UV-2FH-0...7
YF
BUFF
YF-BUFF
UVF
BUFF
UVF-BUFF
BUFF
BUFF
FM
FM
Eagle
YOUT
U_VOUT
YUV to RGB
OSD insertion
Contrast Reserve
AD alignment
CLK-OSD
DS90C385 LVDS Transmitter
LVDS Connector
LCD
LAMP-ON
RGBBL-FDB-0...3
RGBBL-OSD-0...5
TDA9905 A/D
RGBBL-OSD
OTC
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Figure 9-8 Video processing 2fH/3fH input

The outputs toward the electronics of the set consist of:
- YUV-422.
- H-2FH-AD-OUT and V-2FH-AD-OUT.
- Left and right audio channels (analogue).
- CLK-2FH.

Notes:
- In case of 2fH inputs, the signal is (after detection via the EBILD) routed through the FBX for picture improvement. The YUV output of the Eagle is then routed to the EBILD for the displaying part.
- In case of 3fH inputs, the signal is not routed via the FBX (because the Eagle cannot handle them), but directly processed by the EBILD.

9.5.4 Miscellaneous

Comb Filter

The comb filter functionality can be enabled or disabled via the HIP. This means allowing or disallowing the HIP to use the comb filter. Both the conventional 2D comb filter (EUR) and the 3D comb filter (USA) have to use this HIP command.

Notes:
- The command ENABLE_COMBFILTER enables the function. If the TV standard that enters the TV is one where a comb filter is applicable (e.g. PAL or NTSC, not SECAM), the HIP will determine self if the video signal can be combed and as a consequence, the video processing output can be CVBS or Y/C. No software interaction is needed.
  Remark: Enabling the comb filter does not necessarily mean that the signals will be combed.
- The comb filter must be disabled in case of RGB and for YPbPr-1fH, to avoid big horizontal shifts of the picture caused by the comb filter processing.
- The comb filter is also disabled at very low quality antenna signals for AP due to vertical instability/scrolling effects.

Auto TV

The Auto Picture Control or in short AutoTV, aims at providing the customer the best possible picture performance at any time. Therefore, it performs real time processing of the video signal and because of that, it decides to adapt several video parameters throughout the whole chassis. The total effect of Auto Picture Control on the screen can be selected by the use of the remote control. The commercial name for the feature is "Active Control".

The sets have three digital options: Progressive Scan, Pixel Plus, and Movie Plus. The Progressive Scan mode has no Pixel Plus enhancement. For 2fH inputs, only Progressive Scan or Pixel Plus mode can be selected. For 3fH inputs no digital options are available.
The aim of Movie Plus mode is to reduce the Halo artefacts (halo's are artefacts introduced with the Natural Motion feature). Reducing halo's will result in motion judder. This is compensated by the FBX software.

The basic component for Auto TV is the FBX. It measures the picture content and it has the most video control parameters on board, like peaking, coring, DNR, and so on. With the presence of the Eagle, additionally the colour enhancement functions and the LTI are controlled. Also, the light sensor, needed for ambient light control, is supported via the OTC. Finally, vertical peaking is mostly done in Eagle, a little in the PICNIC, and the motion compensation and DNR is done in the FALCONIC.

See also EM5 service manual.

9.6 Audio

9.6.1 Introduction

In this chassis, there are only Virtual Dolby sets, but there is diversity between Europe and USA sets.

9.6.2 Audio decoding

Two audio decoders will be used:

- ITT MSP 3411: for Europe sets.
- ITT MSP 3421: for USA sets.

Both MSP versions also decode NICAM. The AM signal is also decoded by the MSP.

9.6.3 Audio source selecting

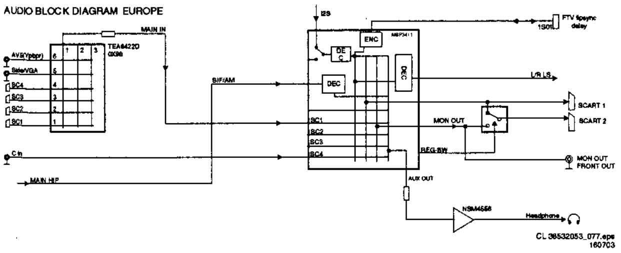
AUDIO BLOCK DIAGRAM EUROPE
MAIN IN
TEA6422D
AV5(Ypbpr)
Side/VGA
SC4
SC3
SC2
SC1
C in
MAIN HIP
SIF/AM
I2S
ENC
MSP3411
DEC
DEC
DEC
L/R LS
SC1
SC2
SC3
SC4
MON OUT
REG-SW
SCART 1
SCART 2
MON OUT
FRONT OUT
FTV lipsync delay
1S01
AUX OUT
NSM4556
Headphone

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Figure 9-9 Audio block diagram

The MSP covers a SIF input, 4 stereo inputs and one mono input. As this chassis needs more inputs, one matrix IC (TEA6422D, item 7117) is added. The stereo inputs on this IC are:

- For Europe:
  - EXT1.
  - EXT2.
  - EXT3.
  - EXT4.
  - AV5 (YPbPr 2fH/3fH).
  - Side I/O.
  - AV6 (VGA).
- For USA:
  - AV1.
  - AV2.
  - AV3.
  - AV4 (YPbPr 1fH or 2fH/3fH).
  - Side I/O.
  - AV5 (DVI).

There are three separated outputs on the matrix IC, but only the main output (MAIN_IN), going to the MSP, is used.

The MSP has the following inputs:

- SIF input (this can be FM, AM, or NICAM).
- MAIN_IN from matrix IC TEA6422D.
- Centre input.

An S/PDIF in/output is not foreseen.

9.6.4 Audio processing

European sets have an MSP3411, USA sets have an MSP3421. Both can handle Virtual Dolby. All sets have 2 x 10 W_rms output.

Following **outputs** are foreseen:

- Europe:
  - EXT1: Front-end
  - EXT2: WYSIWYR.
  - Monitor out: for external Dolby ProLogic amplifier.
  - Headphone out.
- USA:
  - Monitor out: Front-end.
  - Headphone out.

Important remarks

- For Europe: Régimbeau switch (REG_SW): this switch (item 7120) is needed to prevent feedback (Larsen effect). When EXT2 is chosen as incoming signal, the output of EXT2 following the main picture, is also EXT2. This will cause the Larsen effect. To prevent this, the record select must be switched to tuner. This is especially important when decoders are used (e.g. Canal + decoder) behind a "transparent" VCR connected to EXT2.
- It is not allowed to mix up analogue and digital signals in the MSP; SCART-in towards SCART-out should be treated in the analogue source select part of the MSP. Reason for this, is the limited bandwidth in the MSP (16 kHz) while the analogue source selection part can carry up to 20 kHz.
- If a 2fH/3fH source is selected, it is not possible to handle the video signal in the 1fH source selection. Since the video signal cannot be connected to EXT2, the output of EXT2 is switched to FRONTEND, and MONITOR OUT is WYSIWYR (same source as video).

9.6.5 Audio Amplifier Panel (Diagram A)

Introduction

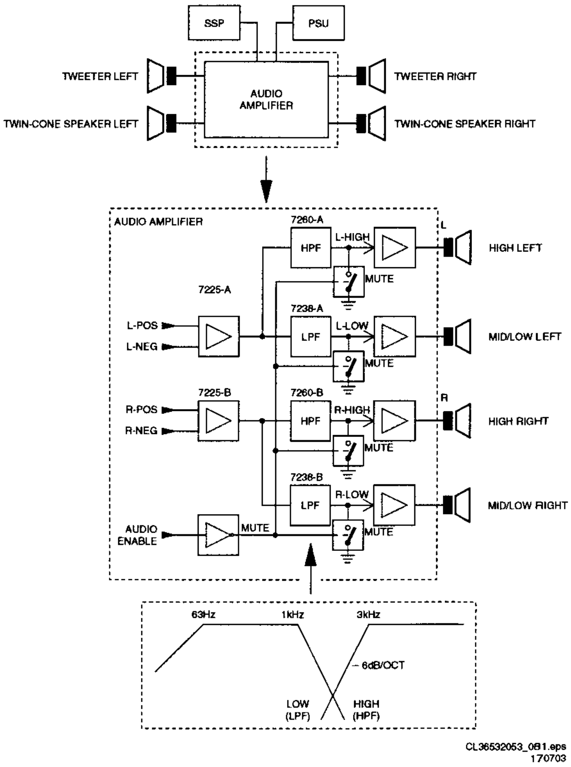
SSP
PSU
TWEETER LEFT
TWIN-CONE SPEAKER LEFT
AUDIO AMPLIFIER
TWEETER RIGHT
TWIN-CONE SPEAKER RIGHT
AUDIO AMPLIFIER
7260-A
L-HIGH
HPF
MUTE
7225-A
7238-A
L-POS
L-NEG
LPF
L-LOW
MUTE
7225-B
7260-B
R-POS
R-NEG
HPF
R-HIGH
MUTE
7238-B
LPF
R-LOW
AUDIO ENABLE
MUTE
MUTE
L
R
HIGH LEFT
MID/LOW LEFT
HIGH RIGHT
MID/LOW RIGHT
63Hz
1kHz
3kHz
- 6dB/OCT
LOW (LPF)
HIGH (HPF)

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Figure 9-10 Block diagram Audio Amplifier

This panel houses the audio filters and amplifiers necessary for driving the speakers. The differential audio inputs (for common mode immunity) come from the SSP (via connector 0388). The PSU delivers the positive and negative supply voltage of 12 V_dc, as well as the +5V2 (standby) voltage.
After being filtered and amplified, the signals go to the speaker section, where the (twin cone) low/mid range speakers and the tweeters are driven (load impedance is 8 Ω).

The headphone amplifier is a straightforward OpAmp amplifier (IC7A07-A, MC33178D). It is supplied with +11V_AUD.

Supply (Diagram A7)

The supply voltage is a symmetrical voltage of +/- 14.5 V_dc, generated by the main supply via L5002.

- V_SND_POS (+12 V_dc) on connector 0302 pin 5/6.
- V_SND_NEG (-12 V_dc) on connector 0302 pin 1/2.

Filter (Diagram A2)

Electrical filtering is needed for following reasons:

- Limiting the cone excursion, thereby reducing the distortion.
- Increasing the power handling capacity (PHC).

Active second order Sallen-Key filters are used, with crossover frequencies of 1 kHz for the low pass filter, and 3 kHz for the high pass filter.

The audio signals are filtered **before** the amplifier. There are some reasons for doing this:

- It is now easy to do active filtering.
- Less costs (no expensive coils and capacitors).

Low Pass Filter (LPF)

For L and R separately, a Low Pass Filter (IC7238A and B) is processing L_LOW and R_LOW.

The output signal of this filter is then fed to the audio amplifier (identical for right channel).

High Pass Filter (HPF)

For L and R separately, a High Pass Filter (IC7260A and B) is processing L_HIGH and R_HIGH.

The output signal of this filter is then fed to the audio amplifier (identical for right channel).

Amplifier (Diagrams A3 to A6)

Each speaker has its own class-D amplifier. These amplifiers combine a good performance with a high efficiency, resulting in a big reduction in heat generation.

Principle

Audio-power-amplifier systems have traditionally used linear amplifiers, which are well known for being inefficient. In fact, a linear Class AB amplifier is designed to act as a variable resistor network between the power supply and the load. The transistors operate in their linear region, and the voltage that is dropped across the transistors (in their role as variable resistors) is lost as heat, particularly in the output transistors. Class D amplifiers were developed as a way to increase the efficiency of audio-power-amplifier systems.

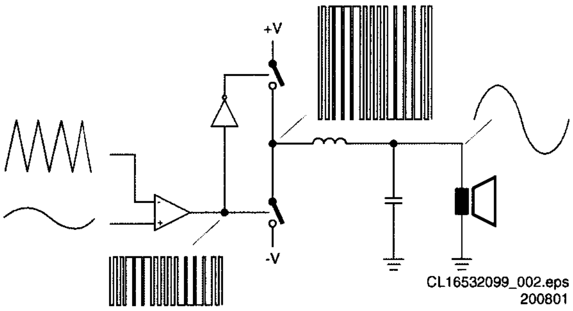

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Figure 9-11 Principle Class-D Amplifier

The Class D amplifier works by varying the duty cycle of a Pulse Width Modulated (PWM) signal.

By comparing the input voltage to a triangle wave, the amplifier increases duty cycle to increase output voltage, and decreases duty cycle to decrease output voltage.

The output transistors (item 7365 on diagram A3) of a Class D amplifier switch from 'full off' to 'full on' (saturated) and then back again, spending very little time in the linear region in between. Therefore, very little power is lost to heat. If the transistors have a low 'on' resistance (R_DS(ON)), little voltage is dropped across them, further reducing losses.

A Low Pass Filter at the output passes only the average of the output wave, which is an amplified version of the input signal. In order to keep the distortion low, negative feedback is applied (via R3308). A second feedback loop (via R3310) is tapped after the output filter, in order to decrease the distortion at high frequencies.

The **advantage** of Class D is increased efficiency (= less heat dissipation). Class D amplifiers can drive the same output power as a Class AB amplifier using less supply current.

The **disadvantage** is the large output filter that drives up cost and size. The main reason for this filter is that the switching waveform results in maximum current flow. This causes more loss in the load, which causes lower efficiency. An LC filter with a cut-off frequency less than the Class D switching frequency (350 kHz), allows the switching current to flow through the filter instead of the load. The filter is less lossy than the speaker, which causes less power dissipated at high output power and increases efficiency in most cases.

Mute (Diagram A3 for "Left High")

A mute switch (item 7302) is provided at the PWM inputs (item 7315, LM311). This switch is controlled by the AU_EN_NOT line, which is controlled via the POR signal (mute at start-up) and via the SOUND_ENABLE line from the OTC (mute during operation). This circuitry is the same for all four amplifier parts.

Protections

Short-circuit Protection (e.g. Diagram A3 for "Left High")

A protection is made against a too high temperature of transistor 7355 in case of a short-circuit of output FET 7365-1. Transistor 7340 is sensing the current through transistor 7355 via R3355, and activates the DC-protection line (see below) in case the current becomes too high. This is the same for all four amplifier parts.

DC-protection (Diagram A7)

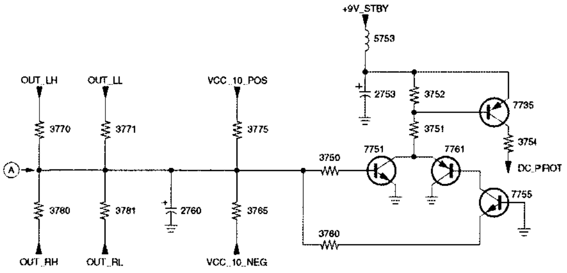

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Figure 9-12 DC Protection

Because of the symmetrical supply, a DC-blocking capacitor, between the amplifier and the speaker, is not necessary. However, it is still necessary to protect the speaker for DC voltages.

The following protections are therefore implemented:

- Via R3765 and R3775, each stabilised supply voltage line (via items 7735 and 7745) is checked on deviations.
- Via R3770/3771/3780/3781, each amplifier output is checked for DC-voltage.

Via R3765/3775, a virtual earth is imposed on point A. When one of the supply voltages deviates, a DC voltage will occur on this point. If point A is positive, T7751 will conduct. If it is negative, T7761 will conduct.

Both cases will make T7735 conduct, so that the DC-PROT signal will be made high. This ensures that the power supply is rapidly trimmed back.

Capacitor C2760 will ensure that only DC-signals at point A will activate the protection.

9.7 Synchronisation

9.7.1 Introduction

Through the chassis, the synchronisation is complicated because the LCD display needs another number of pixel per line (1280) and lines per frame (768). Therefore, there is a different sync flow for 1fH, 2fH, or 3fH inputs.

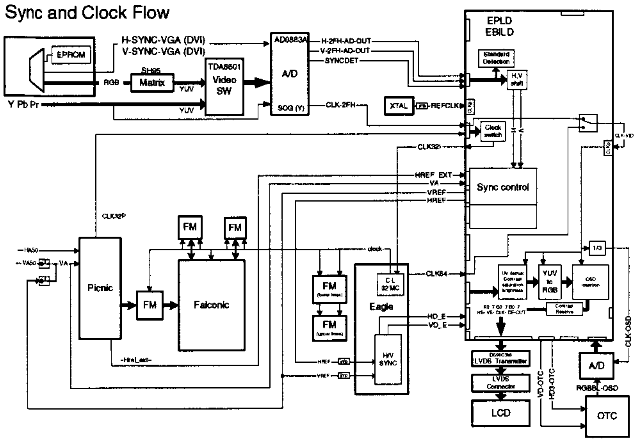
Sync and Clock Flow
EPROM
H-SYNC-VGA (DVI)
V-SYNC-VGA (DVI)
SH95
RGB
Matrix
YUV
TDA8601
Video SW
Y Pb Pr
YUV
AD9883A
A/D
SOG (Y)
H-2FH-AD-OUT
V-2FH-AD-OUT
SYNCDET
CLK-2FH
XTAL
REFCLK
EPLD
EBILD
Standard Detection
H,V shift
Clock switch
H
V
CLK32I
CLK-VID
HREF_EXT
VA
VREF
HREF
Sync control
CLK32P
HA50
VA50
VA
Picnic
FM
FM
FM
Falconic
clock
FM
FM
CL 32 MC
Eagle
CLK64
HD_E
VD_E
H/V SYNC
HREF
VREF
-Href_ext-
1/3
YUV to RGB
OSD insertion
LVDS Transmitter
LVDS Connector
LCD
VD-OTC
HD3-OTC
A/D
RGBBL-OSD
CLK-OSD
OTC

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Figure 9-13 Sync and clock flow

9.7.2 Sync Flow 1fH Inputs

1fH Sync Signals

- At the 1fH side, the HIP is detecting the incoming video signal and provides a H_A / V_A (Horizontal / Vertical Acquisition sync) pulse. This is the sync input for the FBX.
- The flywheel of the PICNIC gives a 1fH sync H_REF_EXT to the EBILD, together with the V_A pulse.
- These are switched in the EBILD and sent to Eagle (H_REF and V_REF).
- The Eagle delivers new sync pulses HD_E and VD_E converted to the new line and frame sequence of the LCD 3fH. The LCD displays in 50 or 60 Hz, 768 lines per field and 1280 samples per line
- The EBILD delivers sync pulses to the OTC for OSD and TXT (VD-OTC and HD3-OTC). Note that the OSD has a field freq of 50/60Hz

1fH Clock Signals

- The PICNIC delivers a 32 MHz clock (CLK32P) to the EBILD synchronised with H pulses.
- The EBILD switches this signals to the Eagle (CLK32I).
- The Eagle delivers a clock signal for the FALCONIC and the field memories.
- The Eagle delivers a 64 MHz clock to the EBILD (CLK64).

9.7.3 Sync Flow 2fH Inputs

2fH Sync Signals

- The input signals do not come via the HIP and PICNIC, but via the AD9883A. This AD converter delivers H and V sync signals to the EBILD (H-2FH-AD-OUT and V-2FH-AD-OUT).
- These inputs are used for standard detection and H and V shift.
- The EBILD divides the pulses by two, and switches the H and V syncs to the Eagle (H_ref and V_ref).
- The Eagle delivers new sync pulses HD_E and VD_E converted to the new line and frame sequence of the LCD 3fH. The LCD displays in 50 or 60 Hz, 768 lines per field and 1280 samples per line.
- The EBILD delivers sync pulses to the OTC for OSD and TXT (VD_OTC and HD3_OTC). Note that the OSD has a field freq of 50/60Hz.
- The PICNIC receives V_ref pulses as reference; it is free running for horizontal sync.

2fH Clock Signals

- The AD9883A gives his sample clock (CLK-2FH) to the EBILD, this clock is synchronised with the incoming H pulses.
- The EBILD switches this pulse to the Eagle (CLK32I).
- The Eagle delivers a clock signal for the FALCONIC and the field memories.
- The Eagle delivers a 64MHz clock to the EBILD (CLK64).

9.7.4 Sync Flow 3fH input sync signals

3fH Sync Signals

- The input signals do not come via the HIP and PICNIC but via the AD9883A. This AD converter delivers H and V sync signals to the EBILD (H-2FH-AD-OUT and V-2FH-AD-OUT).
- The sync signals are the same as with 2fH inputs.

3fH Clock Signals

- The master clock is delivered by the AD9883, same as 2fH inputs; The EBILD uses this clock as sample clock for video control.

9.8 Control

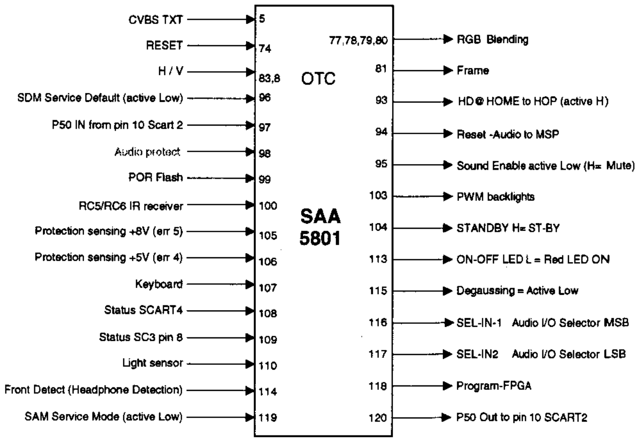
CVBS TXT
5
RESET
74
H / V
83,8
SDM Service Default (active Low)
96
P50 IN from pin 10 Scart 2
97
Audio protect
98
POR Flash
99
RC5/RC6 IR receiver
100
Protection sensing +8V (err 5)
105
Protection sensing +5V (err 4)
106
Keyboard
107
Status SCART4
108
Status SC3 pin 8
109
Light sensor
110
Front Detect (Headphone Detection)
114
SAM Service Mode (active Low)
119
OTC
SAA 5801
77,78,79,80
RGB Blending
81
Frame
93
HD@ HOME to HOP (active H)
94
Reset -Audio to MSP
95
Sound Enable active Low (H= Mute)
103
PWM backlights
104
STANDBY H= ST-BY
113
ON-OFF LED L = Red LED ON
115
Degaussing = Active Low
116
SEL-IN-1 Audio I/O Selector MSB
117
SEL-IN2 Audio I/O Selector LSB
118
Program-FPGA
120
P50 Out to pin 10 SCART2

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Figure 9-14 OTC interfacing

9.8.1 "Switch On" Behaviour

See paragraph "Power States" in this chapter.

9.8.2 OTC Flash

See paragraph "Software Upgrading" in this chapter.

9.8.3 Keyboard

The local keyboard is connected to P2-4 (pin 107) of the OTC, which is an A/D pin. Each key matches with a range of values within the A/D converter.

9.8.4 LED Ccontrol

In USA the same LED configuration is used as in Europe, the 2 colour LED.

Table 9-7 LED control

Condition	Two colour LED
On	Green
Off	No indication
Low power standby	No indication
Standby	Red
Semi-standby	Orange (red and green)
Reaction on RC in On-state	Orange (green and (red blinking))
Reaction on RC in Standby	Red
Reaction on RC in Semi-standby	Orange (green and (red blinking))
Protection	Red blinking

9.9 Protections

9.9.1 General

Under certain fault conditions, as described below, the set must go into the "protection state". This means that the set is switched into standby and displays a blinking LED. These protections are introduced in order to avoid unacceptable temperature rises and burning hazards. The failure cause will be identified and put into the NVM error buffer. For the customer, it is made impossible to switch "on" the set with his remote control.

On the other hand, it must be possible to read out the error codes from NVM while using a Dealer Service Tool or a ComPair tool, or to de-activate the protection states in Service Default Mode. It is possible to enter ComPair from protection but not from standby.

The protection algorithms are activated/de-activated at a certain stage in the "start-up/switch-off" sequence of the set (see also figure "Step wise start-up diagram" in chapter "Service Modes, Error Codes, and Fault Finding").

9.9.2 Hardware protections

Short-circuiting the 3V3 supply from the DC/DC converter will shut down the DC/DC converter. There are no hardware protections foreseen that switch "off" the supply.

There are several types of software related protections, solving a variety of fault conditions:

- Protections related to supply: check if the +8V coming from the main supply and the +5V coming from the standby supply are present.
- Protections related to temperature problems in the DC/DC converter, which supplies the FBX, EBILD, 3D comb (USA), and tuner.

These protections use various mechanisms of detection:

- Via polling on I/O pins going to/coming from the OTC: +5V and +8V.
- Via a "not acknowledge" state of the I2C bus: for FBX, EBILD, 3D comb (USA), and tuner.

Protections with detection via I/O lines of the OTC

8V protection

The +8V information is an ADC input of the microprocessor. This input can sense the absence of the +8V. The failure is filtered by software and put in the error buffer for serviceability. The set must go into protection.

5V protection

The microprocessor can sense the absence of the +5V. The failure must be filtered by software and put in the error buffer for serviceability. The set must go into protection.

Because of the architectural set-up of the power supply (the +5V supply is linked to the +5V2 standby supply of the OTC), it is not possible to detect a complete absence of the +5V and to signal it in software. Therefore, no software error indication will be available when there is a complete short circuit of the +5V supply.

What happens is this:

- When the +5V_SW is overloaded (short circuit), this will also overload the +5V2. The supply that feeds the OTC, the standby supply, hiccups. As a result, the +5V2 is not overloaded anymore and can rise again. Because of the dip in the OTC supply voltage, the OTC will get a reset and restarts the set. If the fault cause is still present at that start-up, the system will restart all over and the set will be in a hiccup mode. This is not a problem if the duty cycle is low enough.
- If however, the short circuit on the +5V is such that the +5V2 supply is not overloaded and the remaining voltage on the +5V2 is still high enough to keep the OTC alive, the short circuit on the +5V can be detected via the ADC input of the OTC the same way the +8V protection is implemented. The set must also go into protection.

If a +8V or a +5V dropout is detected, the protection input should be checked several times, every 200ms. If the protection input is active for five consecutive times, the set must go into protection.

DC protection (from audio amplifier)

Because of the symmetrical supply of the audio amplifier, a DC-blocking capacitor between the amplifier and the speaker is not necessary. However, it is still necessary to protect the speaker for DC voltages. If a DC protection is activated, the OTC will set the TV in protection. A specific error code is **not** generated. For a detailed description, see paragraph "Audio Amplifier".

Protections with detection via I2C bus

DC/DC protection:

When a 3V3 supply is short-circuited, the DC/DC converter switches "off". The FBX, EBILD, and 3D Comb have no supply voltage and therefore will give no acknowledge. In this case, the set goes into protection and an error code is generated (error "55").

Feature box protection

The FBX protection is no longer available. It is replaced by a combined protection called "DC/DC protection".

Tuner protection

The tuner is supplied by the +5V_SW, which is delivered by the standby supply. When this supply is short-circuited, the standby supply will hiccup. If the tuner does not acknowledge on its I2C address for five consecutive times, the set goes into protection and error "13" is generated. Maximum time allowed before protection: 1.5 s.

3D Comb filter protection (USA)

The 3D comb protection is no longer available. It is replaced by a combined protection called "DC/DC protection".

9.10 LCD Panel

9.10.1 Introduction

First, a small comparison between CRT and LCD technology:

- Cathode Ray Tube:
  - Homogeneous surface.
  - Wide range of number of displayable pixels (limited by bandwidth and shadow mask).
  - Wide range of number of lines (limited by deflection characteristics).
  - Wide range of frame/field frequencies (limited by deflection and flicker).
  - Interlaced and progressive images.
- Liquid Crystal Display:
  - Fixed number of pixels per row.
  - Fixed number of rows.
  - Limited range of field frequencies: often 50-60 Hz, sometimes up to 75 Hz.
  - Progressive images only: de-interlacing and scaling necessary.

The LC300W01 from LPL (LG.Philips LCD) is a colour Active Matrix Liquid Crystal Display (AM LCD) with an integrated Cold Cathode Fluorescent Lamp (CCFL) backlight system. The matrix employs a-Si Thin Film Transistors (TFT) as the active elements.
It is a transmissive type display operating in the normally white mode. This TFT-LCD has a 30.0 inch diagonally measured active display area with WXGA resolution (1280 horizontal by 768 vertical pixel array). Each pixel is divided into Red, Green, and Blue sub-pixels or dots, which are arranged in vertical stripes.
Greyscale, or the brightness of the sub-pixel colour, is determined with a 8-bit greyscale signal for each dot, thus, presenting a palette of more than 16.7 Million (true) colours.
The panel uses an 8-bit Low Voltage Differential Signalling (LVDS) interface.

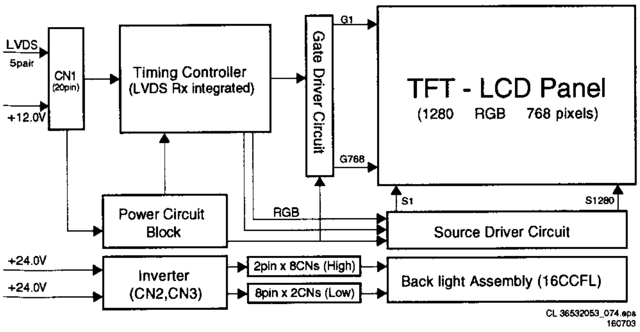
LVDS
5pair
+12.0V
CN1
(20pin)
Timing Controller
(LVDS Rx integrated)
Gate Driver Circuit
G1
G768
TFT - LCD Panel
(1280 RGB 768 pixels)
Power Circuit
Block
RGB
S1
S1280
Source Driver Circuit
+24.0V
+24.0V
Inverter
(CN2,CN3)
2pin x 8CNs (High)
8pin x 2CNs (Low)
Back light Assembly (16CCFL)
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Figure 9-15 Block diagram LCD panel

Table 9-8 Backlight connector pinning

Pin	Symbol	Description
1	GND	Ground
2	Bright-Adjust	0V (Min), 5V (Max)
3	GND	Ground
4	On/Off	On = 5V, 0V = Off
5	GND	Ground
6	GND	Ground
7	NC	No connection
8	GND	Ground
9	GND	Ground
10	Vin	+24V
11	Vin	+24V
12	Vin	+24V
13	Vin	+24V
14	Vin	+24V
15	Vin	+24V

9.10.2 LVDS Interface

- Standard single ended signal (TTL).
  - This requires 28 signal lines and more than 14 grounds.
  - Single ended signals up to 3 V.
  - Wide flat ribbon cable.
  - EMI/EMC problems.
  - Feasible up to VGA/NTSC resolution (limited to 250 Mb/s).
- LVDS
  - Five low voltage (350 mV) differential pairs: one clock pair and four data pairs.
  - Five grounds.
  - EMI/EMC friendly.
  - WXGA and HD-1280x720p (up to 1 Gb/s).

LVDS offers superior performance compared to the standard single ended signal (TTL).
It is even "protocol independent" so it requires no software.

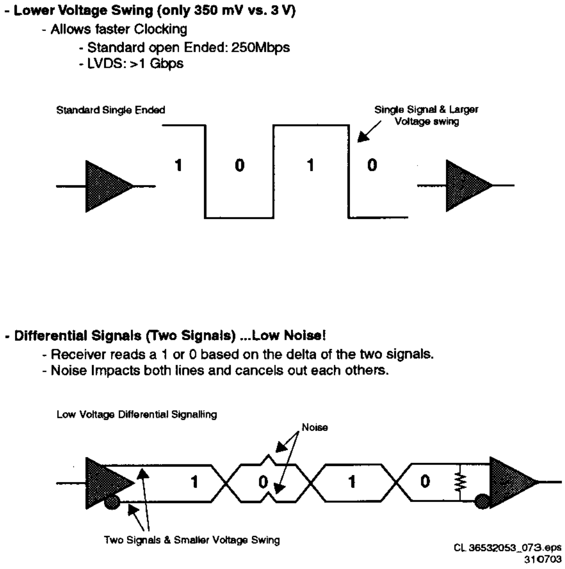
- Lower Voltage Swing (only 350 mV vs. 3 V)
- Allows faster Clocking
- Standard open Ended: 250Mbps
- LVDS: >1 Gbps
Standard Single Ended
Single Signal & Larger Voltage swing
1
0
1
0
- Differential Signals (Two Signals) ...Low Noise!
- Receiver reads a 1 or 0 based on the delta of the two signals.
- Noise Impacts both lines and cancels out each others.
Low Voltage Differential Signalling
Noise
1
0
1
0
Two Signals & Smaller Voltage Swing
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Figure 9-16 LVDS technology

9.11 Software Upgrading

9.11.1 Introduction

In this chassis, you can **upgrade** the software via ComPair. This offers the possibility, to replace the entire SW image without having to remove the flash-memory from its socket. You can find more information on how this procedure works in the ComPair file. It is possible that not all sets are equipped with the hardware, needed to make software upgrading possible. To speed up the programming process, the firmware of the ComPair interface can be upgraded. See Chapter "Service Modes ...", paragraph "ComPair" - "How To Order" for the order number.

9.11.2 Specifications

Some specifications are:

- The upgrade feature makes use of I2C to transfer a new SW image (4 MB).
- It requires the ComPair interface Box (RS232 to I2C).
- The I2C bus is available at the rear side of the set.

- It uses a ZIP-compressed BIN image to speed up the transfer process (1/2 size).
- The complete procedure takes less than 20 minutes with an upgraded ComPair interface:
  - About 90 seconds to erase a 4 MB flash-memory.
  - Less than 10 minutes to transfer the file (max 1.9 MB).
  - About 5 minutes to decompress/program the flash-memory.

Note: It takes about 85 minutes with a standard interface.

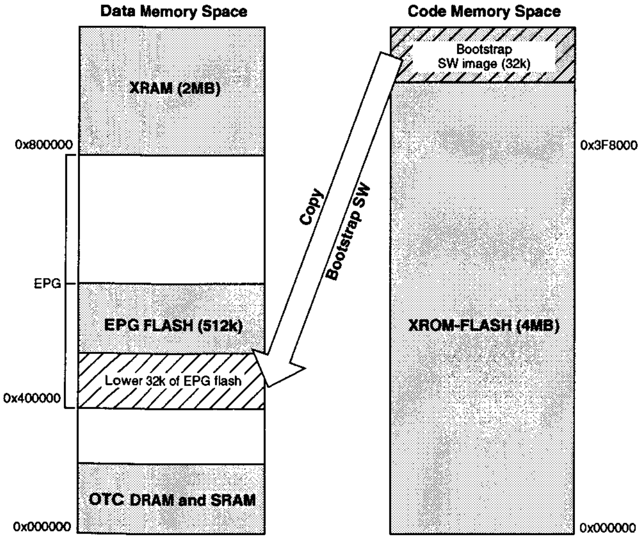
Constraints:

- Needs the EPG flash memory, so this device must be placed also for non-EPG regions like AP and USA.

Advantages:

- Flexibility.
- No change in internal ROM (IROM) required (IROM not used).
- Flexibility to change of code flash manufacturer as the "flash driver" is part of the bootstrap code (part of the main software image).

9.11.3 Concept


Data Memory Space
Code Memory Space
XRAM (2MB)
0x800000
EPG
EPG FLASH (512k)
Lower 32k of EPG flash
0x400000
OTC DRAM and SRAM
0x000000
Bootstrap SW image (32k)
Copy Bootstrap SW
XROM-FLASH (4MB)
0x3F8000
0x000000

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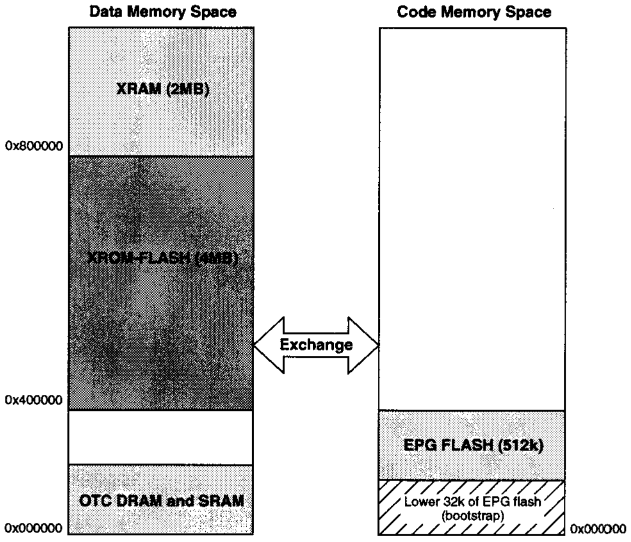
130503

Figure 9-17 Memory diagram (initial situation)

The architecture of the OTC microprocessor does not allow the execution of code from the external RAM. It is also impossible to write data in the code memory space (there is no instruction to write data to those memory locations).
The OTC normally boots from its internal ROM (IROM) but modification of the **internal** ROM software would be too expensive. Fortunately, the chip architecture allows also the booting from **external** ROM (XROM).
The IROM is mapped on the first 32 kB of the ROM address space. The XROM is mapped starting at the same address. Therefore, the lower 32 kB of XROM overlaps the IROM memory space.
Via an external pin (EA), it is possible to reveal the XROM memory below the IROM and so boot using this hidden software. This is the first trick used by the software upgrade procedure.

To be able to write to the CODE flash, it is required to address the device via the RAM address space. Today all RAM but also the EPG flash is mapped on the RAM address space. Devices are mapped to the right address space via a few control lines (kind of chip select). By exchanging the control lines between the EPG and the CODE flash, it is possible to map the CODE flash in the RAM address space and at the same time use the EPG flash to execute software. This is the second trick used by the procedure.

The main idea is to use the EPG flash to boot up the software upgrade procedure.
Therefore, the complete procedure relies on the presence of that one.


Data Memory Space
Code Memory Space
XRAM (2MB)
0x800000
XROM-FLASH (4MB)
Exchange
0x400000
EPG FLASH (512k)
OTC DRAM and SRAM
Lower 32k of EPG flash (bootstrap)
0x000000
0x000000

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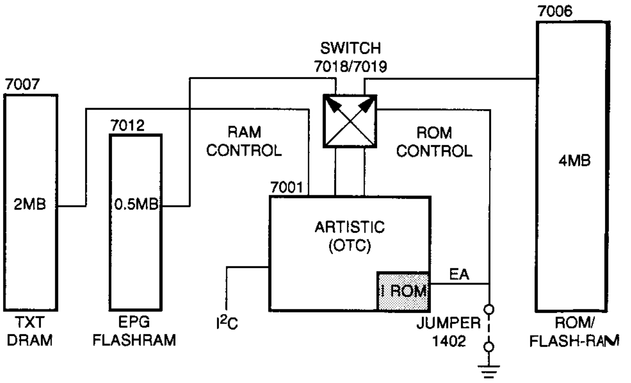
130503

Figure 9-18 Memory diagram (after bus exchange)

In order to be able to write new software code to the set, we therefore must copy the bootstrap code to a free memory area (e.g. the EPG flash-memory) in order to be able to execute "externally" the upgrade procedure code.
Solution: swap the software code to the data memory space (via setting jumper/switch 1402) and boot from the EPG FLASH.
After the zip-file uploading and (internally) software unpacking, the old situation must be restored.

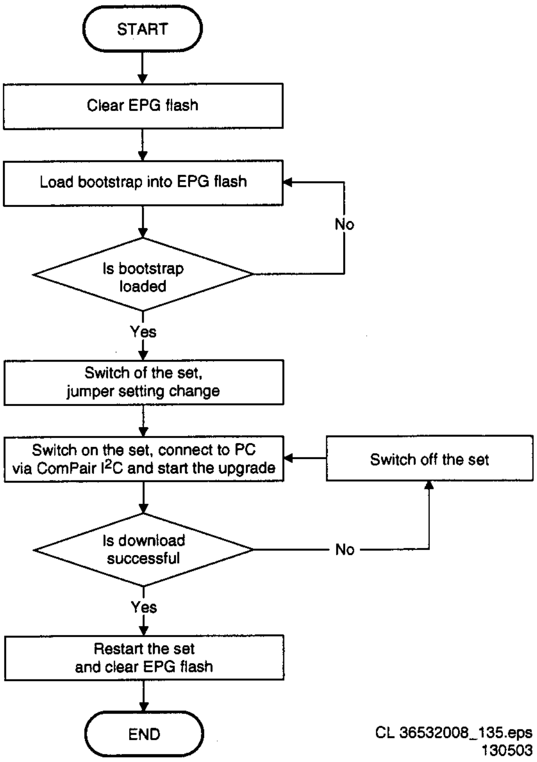

7006
SWITCH 7018/7019
7007
7012
RAM CONTROL
ROM CONTROL
4MB
2MB
0.5MB
7001
ARTISTIC (OTC)
EA
I ROM
TXT DRAM
EPG FLASHRAM
I²C
JUMPER 1402
ROM/ FLASH-RAM

CL 36532008_116.eps
060503

Figure 9-19 Software upgrade set-up

A jumper/switch on the SSP will swap the devices and boot "externally" via the EPG flash. Then, via ComPair, the download command is given. The new (ZIP) image will be first downloaded to the OTCs external RAM (TXT DRAM). Then a checksum on the ZIP image will be computed on both sides (PC and TV) and compared.
If everything is correct, the CODE flash will be erased and the new image will be transferred and unzipped (= decompressed)

into the flash. This is done via the bootstrap code. A second checksum will be computed on the decompressed image. After the upgrade, the EPG flash will be cleared again.


START
Clear EPG flash
Load bootstrap into EPG flash
No
Is bootstrap loaded
Yes
Switch of the set, jumper setting change
Switch on the set, connect to PC via ComPair I²C and start the upgrade
Switch off the set
Is download successful
No
Yes
Restart the set and clear EPG flash
END

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130503

Figure 9-20 Software upgrade flow chart

9.12 Abbreviation list

0/6/12	SCART switch control signal on A/V board. 0 = loop through (AUX to TV), 6 = play 16:9 format, 12 = play 4:3 format
2DNR	Spatial (2D) Noise Reduction
3DNR	Temporal (3D) Noise Reduction
AARA	Automatic Aspect Ratio Adaptation: algorithm that adapts aspect ratio to remove horizontal black bars; keeps the original aspect ratio
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box
AM	Amplitude Modulation
ANR	Automatic Noise Reduction: one of the algorithms of Auto TV
AP	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
Artistic	See OTC 2.5: main processor
ASF	Auto Screen Fit: algorithm that adapts aspect ratio to remove horizontal black bars without discarding video information
ATSC	Advanced Television Systems Committee
ATV	See Auto TV
Auto TV	A hardware and software control system that measures picture content, and adapts image parameters in a dynamic way
AV	External Audio Video
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz
BTSC	Broadcast Television Standard Committee. Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries
B-TXT	Blue TeleteXT
C	Centre channel (audio)
CL	Constant Level: audio output to connect with an external amplifier
ComPair	Computer aided rePair
CSM	Customer Service Mode
CLK_2FH	Clock output AD converter
CTI	Colour Transient Improvement: manipulates steepness of chroma transients
CVBS	Composite Video Blanking and Synchronization
DAC	Digital to Analogue Converter
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DDC	See "E-DDC"
D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
DFU	Directions For Use: owner's manual
DNR	Digital Noise Reduction: noise reduction feature of the set
DRAM	Dynamic RAM
DSP	Digital Signal Processing
DST	Dealer Service Tool: special remote control designed for service technicians

DVD	Digital Versatile Disc
DVI(-d)	Digital Visual Interface (d= digital only)
Eagle	Feature box IC performing peaking, zooming and sub pixel LTI in both horizontal and vertical directions, CTI, and other colour features
EBILD	Eagle Based Intelligent LCD Driver (Programmed EPLD)
E-DDC	Enhanced Display Data Channel (VESA standard for communication channel and display). Using E-DDC, the video source can read the EDID information form the display.
EDID	Extended Display Identification Data (VESA standard)
EEPROM	Electrically Erasable and Programmable Read Only Memory
EMI	Electro Magnetic Interference
EPLD	Erasable Programmable Logic Device
EU	Europe
EXT	EXTernal (source), entering the set by SCART or by cinches (jacks)
FALCONIC	SAA4992H, feature box IC which performs Digital Natural Motion, 3DNR vertical zoom, and vertical peaking
FBL	Fast BLanking: DC signal accompanying RGB signals
FBX	Feature BoX: part of the small signal board /separate module which contains 100 Hz processing, extra features and AutoTV algorithms (FBX6= based on PICNIC, FBX7= based on PICNIC and Eagle)
FDS	Full Dual Screen (same as FDW)
FDW	Full Dual Window (same as FDS)
FLASH	FLASH memory
FM	Field Memory or Frequency Modulation
FTV	Flat TeleVision
Gb/s	Giga bits per second
G-TXT	Green TeleteXT
H	H_sync to the module
H_2FH_AD_OUT	H-sync output from AD converter
HDI	High Definition Interface
H-DVI	H_sync from DVI to RGB converter chip
HIP	High-end video Input Processor (TDA9320): video and chroma decoder.
HOP	High-end video Output Processor (TDA9330): video, sync, and geometry controller
HP	HeadPhone
H_DVI	H-sync from DVI-to-RGB converter chip
H_SYNC_VGA	H-sync on VGA connector
I	Monochrome TV system. Sound carrier distance is 6.0 MHz
I2C	Integrated IC bus
I2S	Integrated IC Sound bus
IF	Intermediate Frequency
Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of lines. The fields are written in "pairs", causing line flicker.
IR	Infra Red
IRQ	Interrupt Request
ITV	Institutional TeleVision, TV sets for hotels, hospitals etc.
Last Status	The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customer's preferences

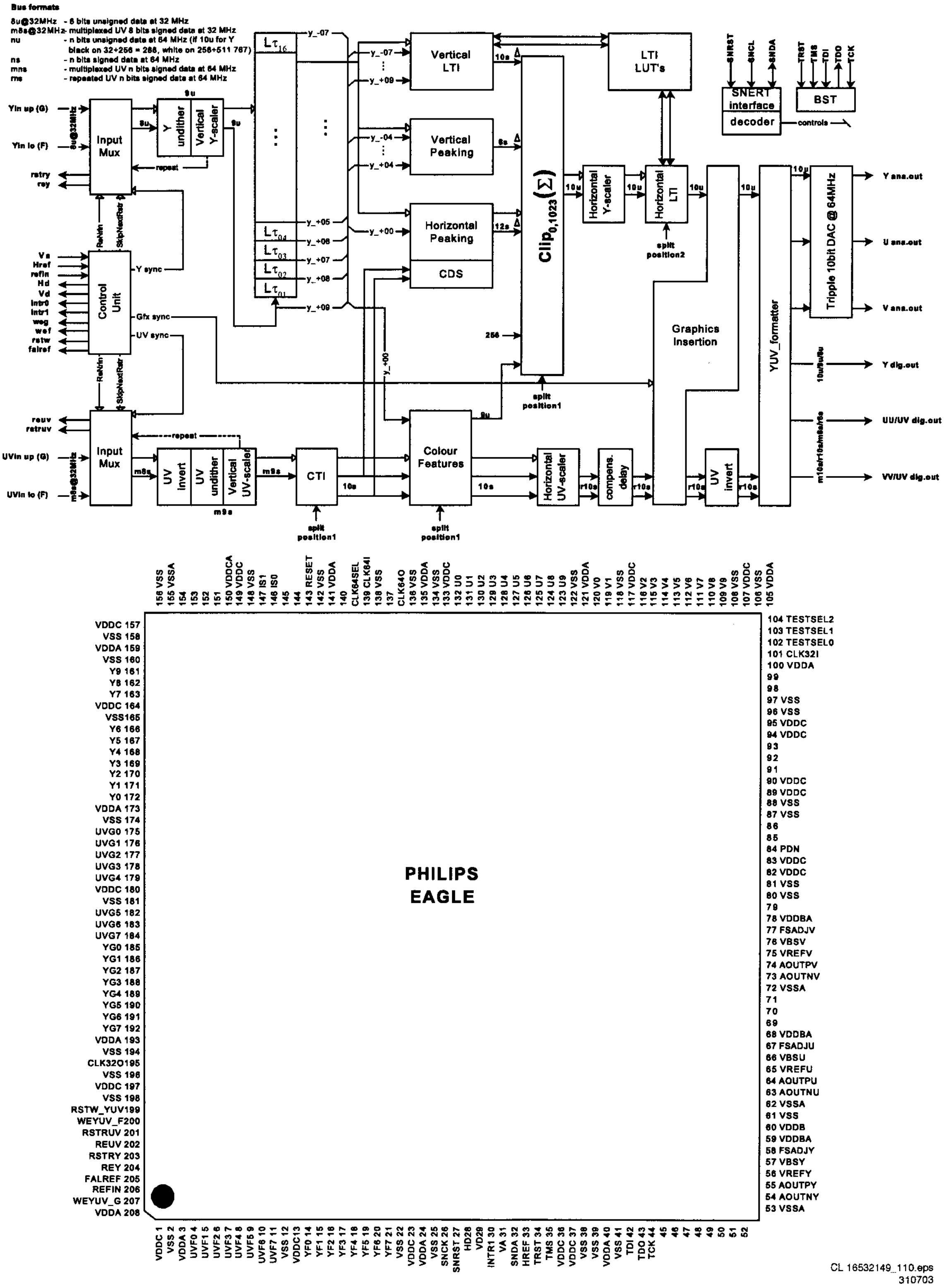
LATAM	Latin America
LCD	Liquid Crystal Display
LED	Light Emitting Diode
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
LS	Loudspeaker
LVDS	Low Voltage Differential Signalling
Mbps	Mega bits per second
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
MOSFET	Metal Oxide Silicon Field Effect Transistor, switching device
MPEG	Motion Pictures Experts Group
MSP	Multi-standard Sound Processor: ITT sound decoder
MUTE	MUTE Line
NC	Not Connected
NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, mainly used in Europe.
NTC	Negative Temperature Coefficient, non-linear resistor
NTSC	National Television Standard Committee. Colour system mainly used in North America and Japan. Colour carrier NTSC M/N= 3.579545 MHz, NTSC 4.43= 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
NVM	Non-Volatile Memory: IC containing TV related data such as alignments
O/C	Open Circuit
OSD	On Screen Display
OTC	On screen display Teletext and Control; also called Artistic (SAA5800)
OTP	One Time Programmable
P50	Project 50: communication protocol between TV and peripherals
PAL	Phase Alternating Line. Colour system mainly used in West Europe (colour carrier= 4.433619 MHz) and South America (colour carrier PAL M= 3.575612 MHz and PAL N= 3.582056 MHz)
PCB	Printed Circuit Board (same as "PWB")
PCM	Pulse Code Modulation
PDP	Plasma Display Panel
PFC	Power Factor Corrector (or Pre-conditioner)
PICNIC	Peripheral Integrated Combined Network IC (SAA4978): main IC for 100 Hz features and feature processing
PIP	Picture In Picture
PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency
POR	Power On Reset, signal to reset the P
Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.
PTC	Positive Temperature Coefficient, non-linear resistor
PWB	Printed Wiring Board (same as "PCB")
PWM	Pulse Width Modulation
RAM	Random Access Memory
RGB	Red, Green, and Blue. The primary colour signals for TV. By mixing levels of R, G, and B, all colours (Y/C) are reproduced.
RGB_DVI	RGB video input on DVI converter chip
RGB_VGA	RGB video input on VGA connector

RC	Remote Control
RC5 / RC6	Signal protocol from the remote control receiver
RESET	RESET signal
ROM	Read Only Memory
R-TXT	Red TeleteXT
SAM	Service Alignment Mode
S/C	Short Circuit
SCART	Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televisieurs
SCL	Serial Clock I2C
SCL-F	CLock Signal on Fast I2C bus
SD	Standard Definition
SDA	Serial Data I2C
SDA-F	DAta Signal on Fast I2C bus
SDRAM	Synchronous DRAM
SECAM	SEequence Couleur Avec Memoire. Colour system mainly used in France and East Europe. Colour carriers= 4.406250 MHz and 4.250000 MHz
SIF	Sound Intermediate Frequency
SMPS	Switched Mode Power Supply
SOG	Sync On Green
SOPS	Self Oscillating Power Supply
S/PDIF	Sony Philips Digital InterFace
SRAM	Static RAM
SSP	Small Signal Panel
STBY	STandBY
SUB_Y/U/V_2FH	Y/U/V input from I/O cel
SOGIN	Sync-On-Green input AD converter
SOGOUT	Sync-On-Green output AD converter
SVGA	800x600 (4:3)
SVHS	Super Video Home System
SW	Software
SXGA	1280x1024
SYNCDET	SOGOUT from AD converter
TFT	Thin Film Transistor
THD	Total Harmonic Distortion
TXT	TeleteXT
TXT-DW	Dual Window with TeleteXT
uP	Microprocessor
U_2FH_0..7	U digital output AD converter port 0 to 7 (7= MSB)
UXGA	1600x1200 (4:3)
V	V-sync to the module
V_2FH_0..7	V digital output AD converter port 0 to 7 (7= MSB)
V_2FH_AD_OUT	V-sync output from AD converter
VCR	Video Cassette Recorder
V_DVI	V-sync from DVI-to-RGB converter chip
VESA	Video Electronics Standards Association
VGA	640x480 (4:3)
VL	Variable Level out: processed audio output toward external amplifier
V_SYNC_VGA	V-sync on VGA connector
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
WXGA	1280x768 (15:9)
XTAL	Quartz crystal
XGA	1024x768 (4:3)
Y	Luminance signal
Y_2FH_0..7	Y digital output AD converter port 0 to 7 (7= MSB)
Y/C	Luminance (Y) and Chrominance (C) signal
YPbPr	Component video. Luminance and scaled colour difference signals (B-Y and R-Y)
YUV	Component video
YUV_2FH	YUV video input AD converter
YUV_VGA	YUV output from matrix (RGB to YUV)

9.13 IC Data Sheets

This section shows the internal block diagrams and pin layouts of ICs that are drawn as "black boxes" in the electrical diagrams (with the exception of "memory" and "logic" ICs).

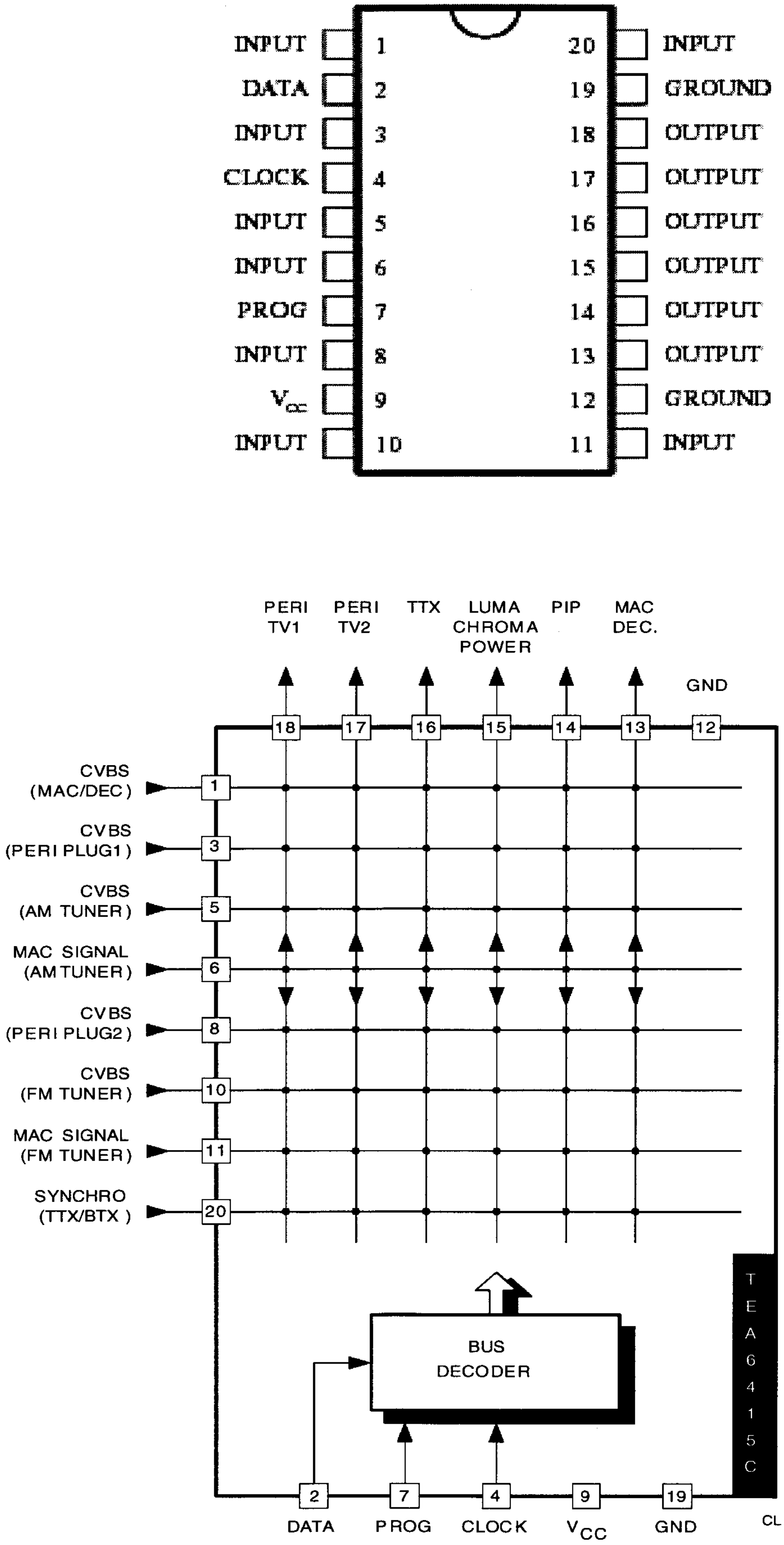
9.13.1 Diagram B3C, T8F24EF (IC7724)


Bus formats
8u@32MHz - 8 bits unsigned data at 32 MHz
m8s@32MHz - multiplexed UV 8 bits signed data at 32 MHz
nu - n bits unsigned data at 64 MHz (if 10u for Y black on 32+256 = 288, white on 256+511 767)
ns - n bits signed data at 64 MHz
mns - multiplexed UV n bits signed data at 64 MHz
rns - repeated UV n bits signed data at 64 MHz
Yin up (G)
Yin lo (F)
rstry
rey
Input Mux
Y undither
Vertical Y-scaler
repeat
Vs
Href
refin
Hd
Vd
intr0
intr1
weg
wef
rstw
falref
Control Unit
Y sync
Gfx sync
UV sync
ReNVin
SkipNextRow
reuv
rstruv
UVin up (G)
UVin lo (F)
UV invert
UV undither
Vertical UV-scaler
m8s
CTI
split position1
Colour Features
Vertical LTI
Vertical Peaking
Horizontal Peaking
CDS
y_-07
y_+09
y_-04
y_+04
y_+05
y_+06
y_+07
y_+08
y_+00
Clip0,1023(Σ)
256
LTI LUT's
SNERT interface decoder
SNRST
SNCL
SNDA
controls
BST
TRST
TMS
TDI
TDO
TCK
Horizontal Y-scaler
Horizontal LTI
split position2
Graphics Insertion
Horizontal UV-scaler
compens. delay
UV invert
YUV_formatter
Tripple 10bit DAC @ 64MHz
Y ana.out
U ana.out
V ana.out
Y dig.out
UU/UV dig.out
VV/UV dig.out
PHILIPS
EAGLE
158 VSS
155 VSSA
154
153
152
151
150 VDDCA
149 VDDC
148 VSS
147 IS1
146 IS0
145
144
143 RESET
142 VSS
141 VDDA
140
139 CLK64SEL
138 CLK64I
138 VSS
137
136 CLK64O
135 VSS
134 VDDA
133 VSS
132 VDDC
131 U0
130 U1
129 U2
128 U3
127 U4
126 U5
125 U6
124 U7
123 U8
122 U9
121 VSS
120 VDDA
119 V0
118 V1
117 VSS
116 VDDC
115 V2
114 V3
113 V4
112 V5
111 V6
110 V7
109 V8
108 V9
107 VSS
106 VDDC
105 VSS
VDDA
VDDC 157
VSS 158
VDDA 159
VSS 160
Y9 161
Y8 162
Y7 163
VDDC 164
VSS165
Y6 166
Y5 167
Y4 168
Y3 169
Y2 170
Y1 171
Y0 172
VDDA 173
VSS 174
UVG0 175
UVG1 176
UVG2 177
UVG3 178
UVG4 179
VDDC 180
VSS 181
UVG5 182
UVG6 183
UVG7 184
YG0 185
YG1 186
YG2 187
YG3 188
YG4 189
YG5 190
YG6 191
YG7 192
VDDA 193
VSS 194
CLK32O195
VSS 196
VDDC 197
VSS 198
RSTW_YUV199
WEYUV_F200
RSTRUV 201
REUV 202
RSTRY 203
REY 204
FALREF 205
REFIN 206
WEYUV_G 207
VDDA 208
104 TESTSEL2
103 TESTSEL1
102 TESTSEL0
101 CLK32I
100 VDDA
99
98
97 VSS
96 VSS
95 VDDC
94 VDDC
93
92
91
90 VDDC
89 VDDC
88 VSS
87 VSS
86
85
84 PDN
83 VDDC
82 VDDC
81 VSS
80 VSS
79
78 VDDBA
77 FSADJV
76 VBSV
75 VREFV
74 AOUTPV
73 AOUTNV
72 VSSA
71
70
69
68 VDDBA
67 FSADJU
66 VBSU
65 VREFU
64 AOUTPU
63 AOUTNU
62 VSSA
61 VSS
60 VDDB
59 VDDBA
58 FSADJY
57 VBSY
56 VREFY
55 AOUTPY
54 AOUTNY
53 VSSA
VDDC 1
VSS 2
VDDA 3
UVF0 4
UVF1 5
UVF2 6
UVF3 7
UVF4 8
UVF5 9
UVF6 10
UVF7 11
VSS 12
VDDC13
YF0 14
YF1 15
YF2 16
YF3 17
YF4 18
YF5 19
YF6 20
YF7 21
VSS 22
VDDC 23
VDDA 24
VSS 25
SNCK 26
SNRST 27
HD28
VD29
INTR1 30
VA 31
SNDA 32
HREF 33
TRST 34
TMS 35
VDDC 36
VDDC 37
VSS 38
VSS 39
VDDA 40
VSS 41
TDI 42
TDO 43
TCK 44
45
46
47
48
49
50
51
52

CL 16532149_110.eps
310703

Figure 9-21 Internal Block Diagram and Pin Layout

9.13.2 Diagram B14A, TEA6415 (IC7I24)


INPUT 1
DATA 2
INPUT 3
CLOCK 4
INPUT 5
INPUT 6
PROG 7
INPUT 8
V_{CC} 9
INPUT 10
20 INPUT
19 GROUND
18 OUTPUT
17 OUTPUT
16 OUTPUT
15 OUTPUT
14 OUTPUT
13 OUTPUT
12 GROUND
11 INPUT
PERI TV1
PERI TV2
TTX
LUMA CHROMA POWER
PIP
MAC DEC.
GND
18
17
16
15
14
13
12
CVBS (MAC/DEC) 1
CVBS (PERI PLUG1) 3
CVBS (AM TUNER) 5
MAC SIGNAL (AM TUNER) 6
CVBS (PERI PLUG2) 8
CVBS (FM TUNER) 10
MAC SIGNAL (FM TUNER) 11
SYNCHRO (TTX/BTX) 20
BUS DECODER
TEA6415C
2 DATA
7 PROG
4 CLOCK
9 V_{CC}
19 GND

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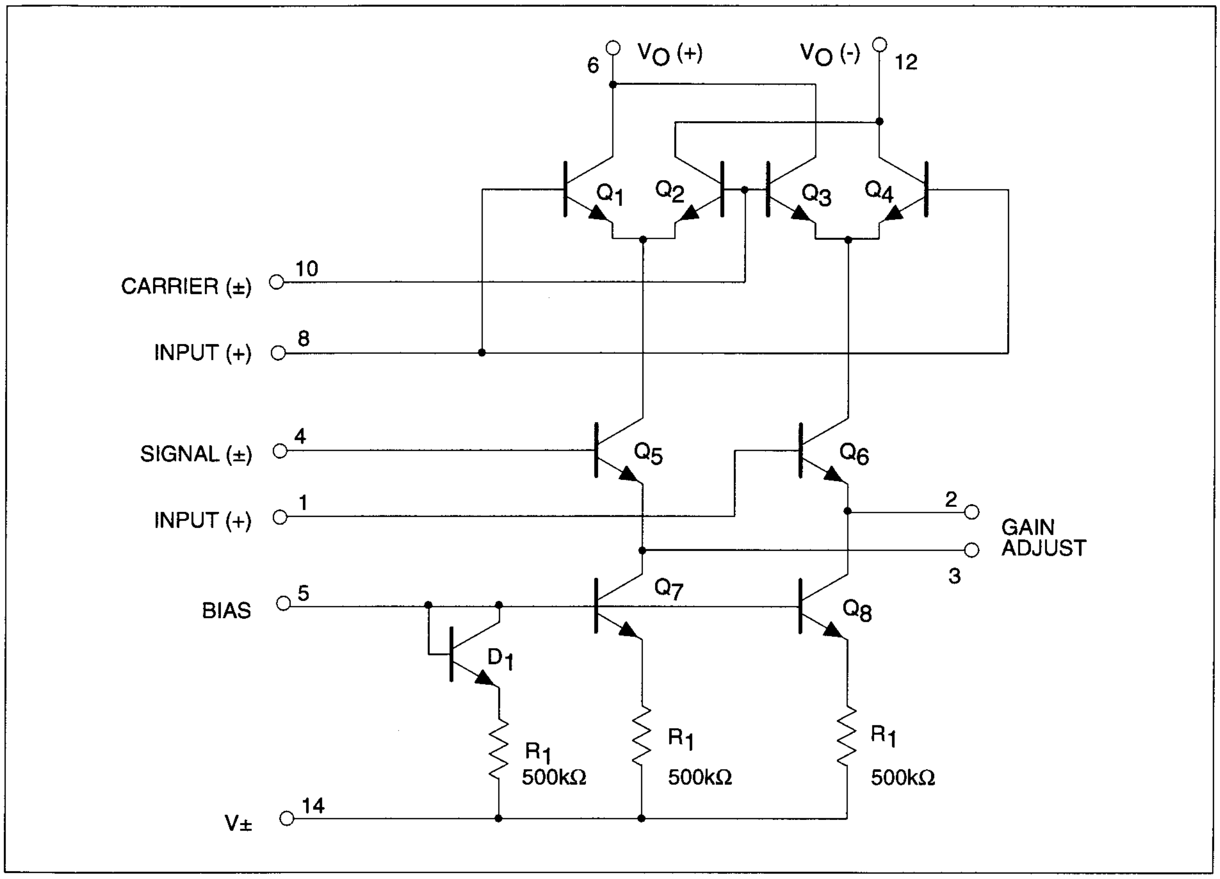
211003

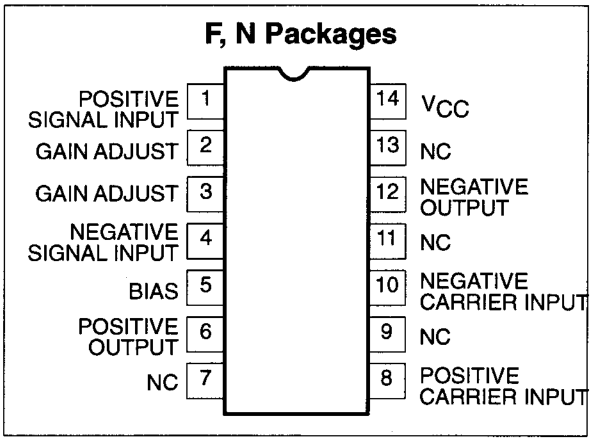
Figure 9-22 Internal Block Diagram and Pin Layout

9.13.3 Diagram B16DE, MC1496D (IC7H40, 7H50, 7H60)

EQUIVALENT SCHEMATIC


6
V_O (+)
V_O (-)
12
Q_1
Q_2
Q_3
Q_4
CARRIER (±)
10
INPUT (+)
8
SIGNAL (±)
4
Q_5
Q_6
INPUT (+)
1
2
GAIN
ADJUST
3
BIAS
5
Q_7
Q_8
D_1
R_1
500kΩ
R_1
500kΩ
R_1
500kΩ
V±
14

PIN CONFIGURATION


F, N Packages
POSITIVE SIGNAL INPUT
1
GAIN ADJUST
2
GAIN ADJUST
3
NEGATIVE SIGNAL INPUT
4
BIAS
5
POSITIVE OUTPUT
6
NC
7
14
V_{CC}
13
NC
12
NEGATIVE OUTPUT
11
NC
10
NEGATIVE CARRIER INPUT
9
NC
8
POSITIVE CARRIER INPUT

CL 36532053_082.eps
170703

Figure 9-23 Internal Block Diagram and Pin Layout

9.13.4 Diagram B19E, AD9066JR (IC7E09, 7E16)

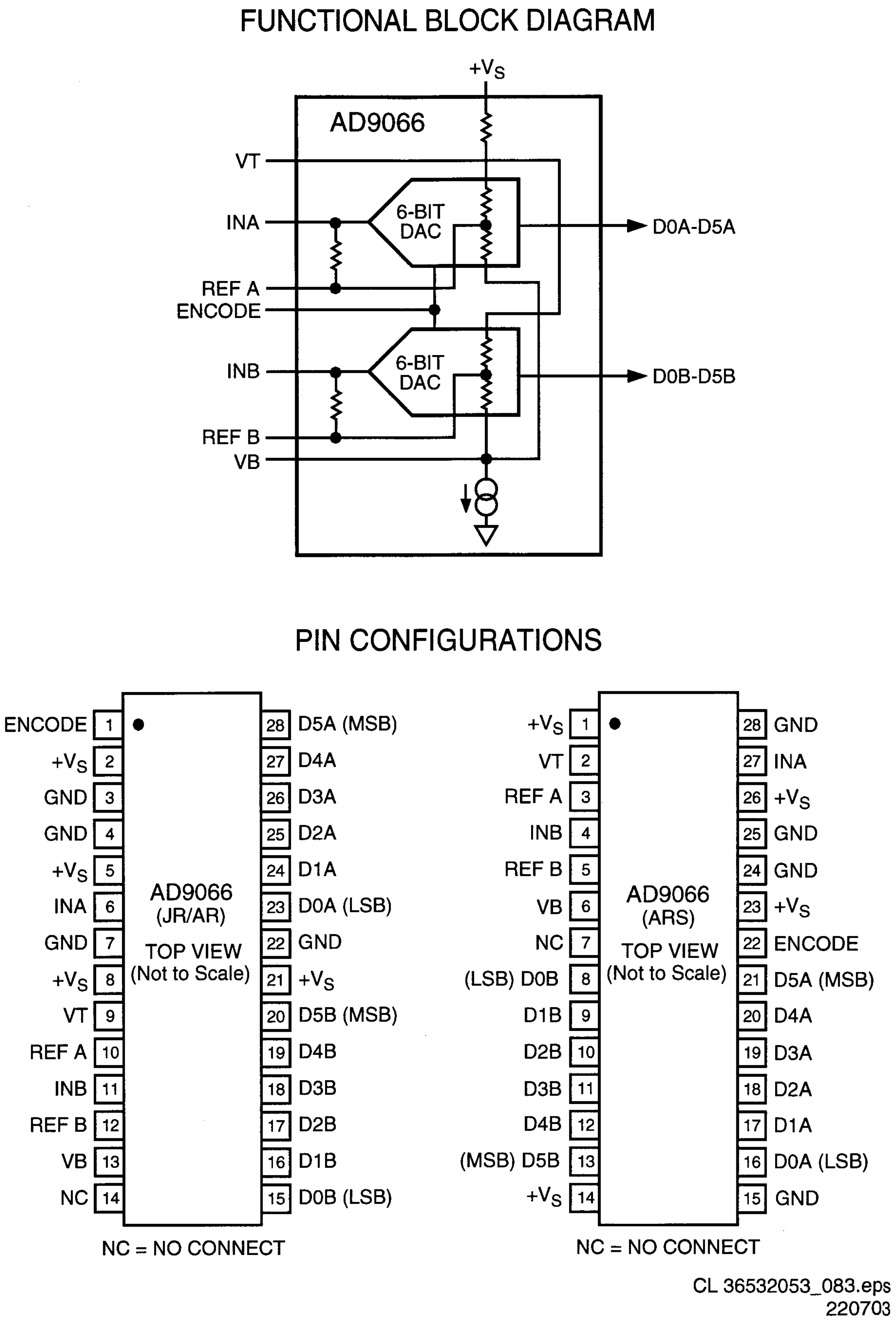

FUNCTIONAL BLOCK DIAGRAM
+VS
AD9066
VT
INA
6-BIT DAC
D0A-D5A
REF A
ENCODE
INB
6-BIT DAC
D0B-D5B
REF B
VB
PIN CONFIGURATIONS
ENCODE 1
+VS 2
GND 3
GND 4
+VS 5
INA 6
GND 7
+VS 8
VT 9
REF A 10
INB 11
REF B 12
VB 13
NC 14
28 D5A (MSB)
27 D4A
26 D3A
25 D2A
24 D1A
23 D0A (LSB)
22 GND
21 +VS
20 D5B (MSB)
19 D4B
18 D3B
17 D2B
16 D1B
15 D0B (LSB)
AD9066 (JR/AR)
TOP VIEW (Not to Scale)
NC = NO CONNECT
+VS 1
VT 2
REF A 3
INB 4
REF B 5
VB 6
NC 7
(LSB) D0B 8
D1B 9
D2B 10
D3B 11
D4B 12
(MSB) D5B 13
+VS 14
28 GND
27 INA
26 +VS
25 GND
24 GND
23 +VS
22 ENCODE
21 D5A (MSB)
20 D4A
19 D3A
18 D2A
17 D1A
16 D0A (LSB)
15 GND
AD9066 (ARS)
TOP VIEW (Not to Scale)
NC = NO CONNECT
CL 36532053_083.eps
220703

Figure 9-24 Internal Block Diagram and Pin Layout

9.13.5 Diagram SP1, TNY266 (IC7500)

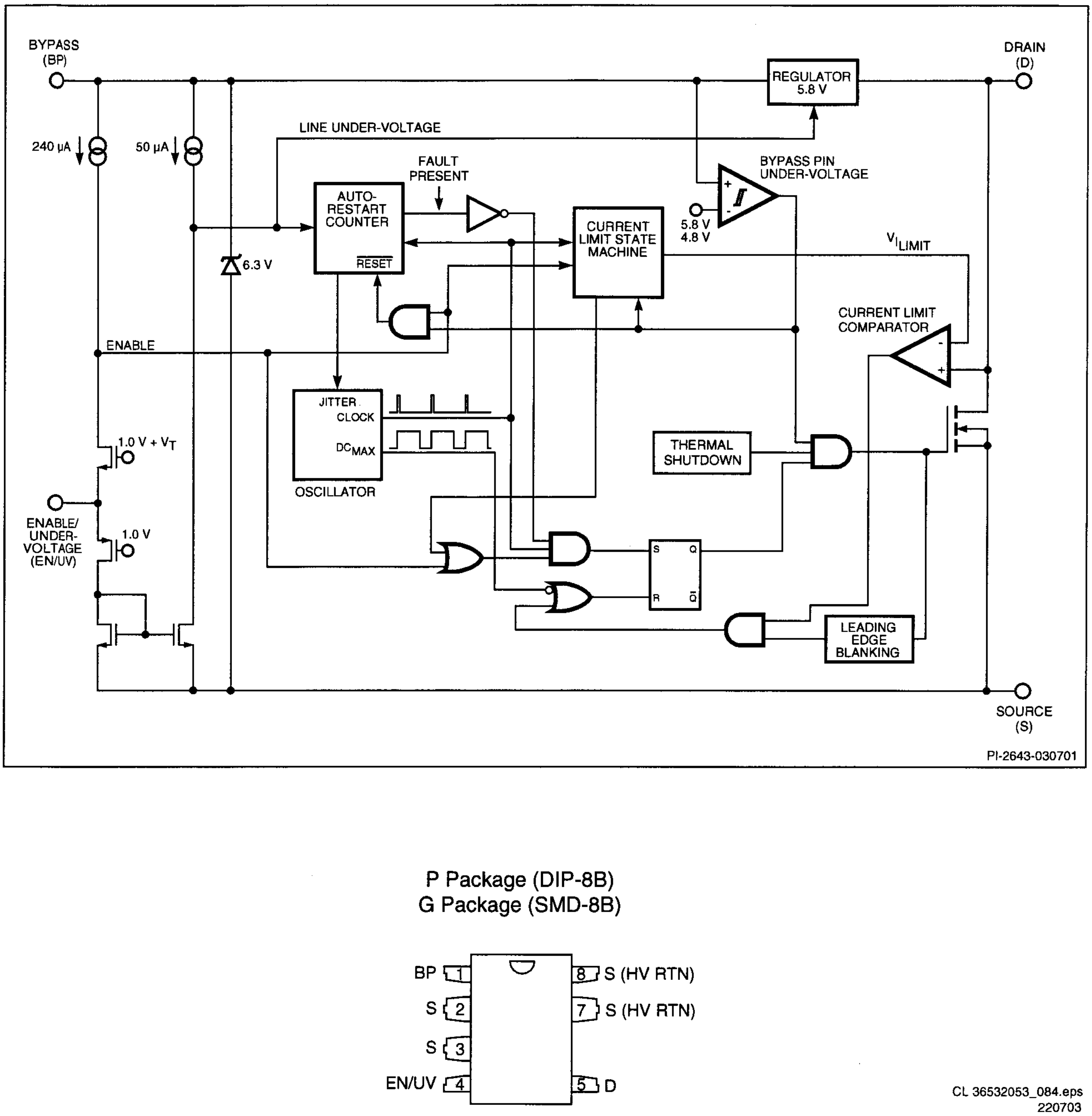
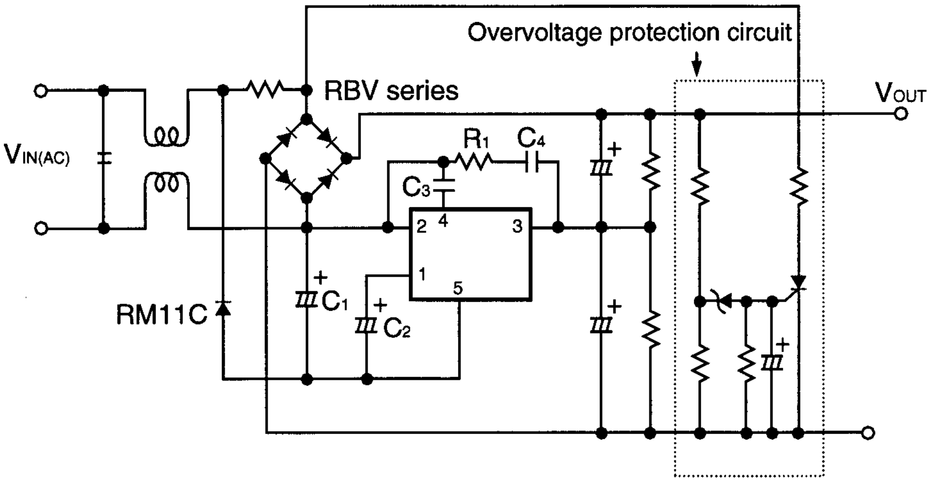
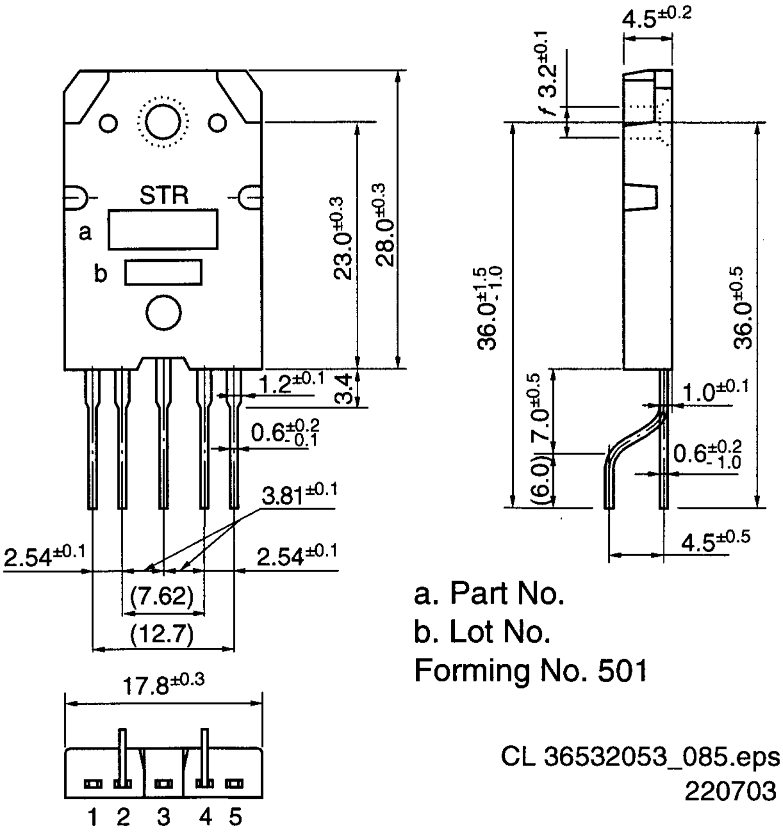

BYPASS
(BP)
240 µA
50 µA
LINE UNDER-VOLTAGE
REGULATOR
5.8 V
DRAIN
(D)
FAULT
PRESENT
AUTO-
RESTART
COUNTER
RESET
6.3 V
CURRENT
LIMIT STATE
MACHINE
5.8 V
4.8 V
BYPASS PIN
UNDER-VOLTAGE
V$_{ILIMIT}$
CURRENT LIMIT
COMPARATOR
ENABLE
JITTER
CLOCK
DC$_{MAX}$
OSCILLATOR
1.0 V + V$_T$
1.0 V
ENABLE/
UNDER-
VOLTAGE
(EN/UV)
THERMAL
SHUTDOWN
S
Q
R
Q̄
LEADING
EDGE
BLANKING
SOURCE
(S)
PI-2643-030701
P Package (DIP-8B)
G Package (SMD-8B)
BP 1
S 2
S 3
EN/UV 4
8 S (HV RTN)
7 S (HV RTN)
5 D
CL 36532053_084.eps
220703

Figure 9-25 Internal Block Diagram and Pin Layout

9.13.6 Diagram SP2, STR83145 (IC7805)


Overvoltage protection circuit
RBV series
VOUT
VIN(AC)
R1
C4
C3
2
4
3
1
5
C1
C2
RM11C

C_1: 4.7μ/400V, C_2: 1μF/50V, C_3: 0.047μF/50V (Observe strictly)
C_4: 0.047μ F/250V, R_1: 4.7W


STR
a
b
4.5±0.2
f 3.2±0.1
23.0±0.3
28.0±0.3
36.0+1.5-1.0
36.0±0.5
1.2±0.1
3.4
1.0±0.1
0.6+0.2-0.1
7.0±0.5
(6.0)
0.6±0.2-1.0
3.81±0.1
4.5±0.5
2.54±0.1
2.54±0.1
(7.62)
(12.7)
17.8±0.3
1 2 3 4 5

a. Part No.
b. Lot No.
Forming No. 501

CL 36532053_085.eps
220703

Figure 9-26 Internal Block Diagram and Pin Layout

10. Spare Parts List

Set Level

Various

0081	3104 308 11331	Inverter cable assy
0108	3104 303 10841	EMC Foam 12x9
0165	3104 308 10621	Fixation wallmount
1116	3104 328 26371	Side I/O assy LCD
1116	3104 328 29941	Side I/O assy ITV
8191	2422 070 98149	Mainscord EUR 1.8mtr.
8301	3104 311 06501	Cable 20p/60/20p
8302	3104 311 06341	Cable 9p/100/9p
8309▲	3104 311 06471	Cable 2p3/100/2p3
8312	3104 311 06361	Cable 15p/340/15p16
8313	3104 311 06371	Cable 15p/560/15p16
8333▲	3104 311 06192	Cable 7p/180/7p
8346▲	3104 311 06561	Cable 5p/220/5p
8355	3104 311 05891	Cable 9p/100/9p
8370	3104 311 05691	Cable 5p/100/5p
8388	3104 311 06201	Cable 8p/480/8p

Audio Amplifier [A]

Various

0302	2422 025 16846	Connector 9p m h
0303	2422 025 16702	Connector 5p m h
0304	2422 025 16543	Connector 4p m
0388	2422 025 16704	Connector 8p m
1730	4822 071 52502	Fuse 2.5A
1740	4822 071 52502	Fuse 2.5A

⊣⊢

2201	4822 126 13193	4.7nF 10% 63V
2202	4822 124 23002	10µF 20% 16V
2204	4822 126 14226	82pF 5% 50V 0603
2205	4822 126 13193	4.7nF 10% 63V
2206	4822 124 23002	10µF 20% 16V
2207	4822 126 14226	82pF 5% 50V 0603
2212	5322 126 11578	1nF 10% 50V 0603
2215	4822 126 13193	4.7nF 10% 63V
2216	4822 124 23002	10µF 20% 16V
2218	4822 126 14226	82pF 5% 50V 0603
2220	4822 126 13193	4.7nF 10% 63V
2221	4822 124 23002	10µF 20% 16V
2222	4822 126 14226	82pF 5% 50V 0603
2224	4822 126 14305	100nF 10% 16V 0603
2225	4822 126 14305	100nF 10% 16V 0603
2233	3198 017 31530	15nF 20% 50V 0603
2233	3198 017 36830	68nF 10% 16V 0603
2234	2238 586 59812	100nF 20-80% 50V 0603
2234	4822 126 14494	22nF 10% 25V 0603
2238	4822 126 14305	100nF 10% 16V 0603
2239	4822 126 14305	100nF 10% 16V 0603
2243	3198 017 31530	15nF 20% 50V 0603
2243	3198 017 36830	68nF 10% 16V 0603
2244	2238 586 59812	100nF 20-80% 50V 0603
2244	4822 126 14494	22nF 10% 25V 0603
2255	4822 126 13193	4.7nF 10% 63V
2255	4822 126 14494	22nF 10% 25V 0603
2256	4822 126 13193	4.7nF 10% 63V
2256	4822 126 14494	22nF 10% 25V 0603
2260	4822 126 14305	100nF 10% 16V 0603
2261	4822 126 14305	100nF 10% 16V 0603
2270	4822 126 13193	4.7nF 10% 63V
2270	4822 126 14494	22nF 10% 25V 0603
2271	4822 126 13193	4.7nF 10% 63V
2271	4822 126 14494	22nF 10% 25V 0603
2309	4822 126 14247	1.5nF 50V 0603
2310	4822 126 14226	82pF 5% 50V 0603
2315	4822 124 12084	1µF 20% 50V
2315	4822 124 23002	10µF 20% 16V
2316	4822 126 14305	100nF 10% 16V 0603
2318	4822 126 14305	100nF 10% 16V 0603
2319	4822 124 12084	1µF 20% 50V
2319	4822 124 23002	10µF 20% 16V
2330	4822 126 14305	100nF 10% 16V 0603
2334	2020 012 93764	220µF 20% 35V
2335	4822 126 14305	100nF 10% 16V 0603
2340	5322 126 11583	10nF 10% 50V 0603
2355	4822 126 14305	100nF 10% 16V 0603
2359	4822 126 14305	100nF 10% 16V 0603
2360	2020 012 93764	220µF 20% 35V
2365	2020 552 96326	220nF 10% 16V
2366	2020 552 96326	220nF 10% 16V
2409	4822 126 14247	1.5nF 50V 0603
2410	4822 126 14226	82pF 5% 50V 0603
2415	4822 124 12084	1µF 20% 50V
2415	4822 124 23002	10µF 20% 16V
2416	4822 126 14305	100nF 10% 16V 0603
2418	4822 126 14305	100nF 10% 16V 0603
2419	4822 124 12084	1µF 20% 50V
2419	4822 124 23002	10µF 20% 16V
2430	4822 126 14305	100nF 10% 16V 0603
2434	2020 012 93764	220µF 20% 35V
2435	4822 126 14305	100nF 10% 16V 0603
2440	5322 126 11583	10nF 10% 50V 0603
2455	4822 126 14305	100nF 10% 16V 0603
2459	4822 126 14305	100nF 10% 16V 0603
2460	2020 012 93764	220µF 20% 35V
2465	2020 552 96326	220nF 10% 16V
2466	2020 552 96326	220nF 10% 16V
2509	4822 126 14247	1.5nF 50V 0603
2510	4822 126 14226	82pF 5% 50V 0603
2515	4822 124 12084	1µF 20% 50V
2515	4822 124 23002	10µF 20% 16V
2516	4822 126 14305	100nF 10% 16V 0603
2518	4822 126 14305	100nF 10% 16V 0603
2519	4822 124 12084	1µF 20% 50V
2519	4822 124 23002	10µF 20% 16V
2530	4822 126 14305	100nF 10% 16V 0603
2534	2020 012 93764	220µF 20% 35V
2535	4822 126 14305	100nF 10% 16V 0603
2540	5322 126 11583	10nF 10% 50V 0603
2555	4822 126 14305	100nF 10% 16V 0603
2559	4822 126 14305	100nF 10% 16V 0603
2560	2020 012 93764	220µF 20% 35V
2565	2020 552 96326	220nF 10% 16V
2566	2020 552 96326	220nF 10% 16V
2609	4822 126 14247	1.5nF 50V 0603
2610	4822 126 14226	82pF 5% 50V 0603
2615	4822 124 12084	1µF 20% 50V
2615	4822 124 23002	10µF 20% 16V
2616	4822 126 14305	100nF 10% 16V 0603
2618	4822 126 14305	100nF 10% 16V 0603
2619	4822 124 12084	1µF 20% 50V
2619	4822 124 23002	10µF 20% 16V
2630	4822 126 14305	100nF 10% 16V 0603
2634	2020 012 93764	220µF 20% 35V
2635	4822 126 14305	100nF 10% 16V 0603
2640	5322 126 11583	10nF 10% 50V 0603
2655	4822 126 14305	100nF 10% 16V 0603
2659	4822 126 14305	100nF 10% 16V 0603
2660	2020 012 93764	220µF 20% 35V
2665	2020 552 96326	220nF 10% 16V
2666	2020 552 96326	220nF 10% 16V
2730	2020 012 93764	220µF 20% 35V
2732	2020 012 93764	220µF 20% 35V
2734	4822 124 12084	1µF 20% 50V
2734	4822 124 23002	10µF 20% 16V
2740	2020 012 93764	220µF 20% 35V
2742	2020 012 93764	220µF 20% 35V
2744	4822 124 12084	1µF 20% 50V
2744	4822 124 23002	10µF 20% 16V
2752	4822 124 23002	10µF 20% 16V
2753	4822 124 23002	10µF 20% 16V
2759	5322 126 11578	1nF 10% 50V 0603
2760	5322 124 41945	22µF 20% 35V
2770	5322 126 11578	1nF 10% 50V 0603
2771	5322 126 11578	1nF 10% 50V 0603
2780	5322 126 11578	1nF 10% 50V 0603
2781	5322 126 11578	1nF 10% 50V 0603
2799	5322 126 11583	10nF 10% 50V 0603

-WW-

3201	4822 051 30221	220Ω 5% 0.062W
3202	4822 051 30102	1kΩ 5% 0.062W
3203	4822 051 30272	2.7kΩ 5% 0.062W
3205	4822 051 30221	220Ω 5% 0.062W
3206	4822 051 30102	1kΩ 5% 0.062W
3207	4822 051 30272	2.7kΩ 5% 0.062W
3210	4822 051 30333	33kΩ 5% 0.062W
3211	4822 117 13632	100kΩ 1% 0.62W 0603
3215	4822 051 30221	220Ω 5% 0.062W
3216	4822 051 30102	1kΩ 5% 0.062W
3217	4822 051 30272	2.7kΩ 5% 0.062W
3220	4822 051 30221	220Ω 5% 0.062W
3221	4822 051 30102	1kΩ 5% 0.062W
3222	4822 051 30272	2.7kΩ 5% 0.062W
3230	4822 051 30101	100Ω 5% 0.062W
3231	4822 051 30103	10kΩ 5% 0.062W
3231	4822 051 30222	2.2kΩ 5% 0.062W
3232	4822 051 30152	1.5kΩ 5% 0.062W
3232	4822 051 30682	6.8kΩ 5% 0.062W
3233	4822 051 30103	10kΩ 5% 0.062W
3233	4822 051 30222	2.2kΩ 5% 0.062W
3234	4822 051 30272	2.7kΩ 5% 0.062W
3234	4822 051 30561	560Ω 5% 0.062W
3240	4822 051 30101	100Ω 5% 0.062W
3241	4822 051 30103	10kΩ 5% 0.062W
3241	4822 051 30222	2.2kΩ 5% 0.062W
3242	4822 051 30152	1.5kΩ 5% 0.062W
3242	4822 051 30682	6.8kΩ 5% 0.062W
3243	4822 051 30103	10kΩ 5% 0.062W
3243	4822 051 30222	2.2kΩ 5% 0.062W
3244	4822 051 30272	2.7kΩ 5% 0.062W
3244	4822 051 30561	560Ω 5% 0.062W
3255	4822 051 30562	5.6kΩ 5% 0.063W 0603
3255	4822 117 11817	1.2kΩ 1% 0.062W
3256	4822 051 30153	15kΩ 5% 0.062W
3256	4822 051 30332	3.3kΩ 5% 0.062W
3257	4822 051 30222	2.2kΩ 5% 0.062W
3257	4822 051 30471	470Ω 5% 0.062W
3259	4822 117 12917	1Ω 5% 0.062W 0603
3270	4822 051 30562	5.6kΩ 5% 0.063W 0603
3270	4822 117 11817	1.2kΩ 1% 0.062W
3271	4822 051 30153	15kΩ 5% 0.062W
3271	4822 051 30332	3.3kΩ 5% 0.062W
3272	4822 051 30222	2.2kΩ 5% 0.062W
3272	4822 051 30471	470Ω 5% 0.062W
3274	4822 117 12917	1Ω 5% 0.062W 0603
3301	4822 117 12902	8.2kΩ 1% 0.063W 0603
3302	4822 051 30103	10kΩ 5% 0.062W
3306	4822 117 12903	1.8kΩ 1% 0.063W 0603
3307	4822 117 13632	100kΩ 1% 0.62W 0603
3308	4822 117 13632	100kΩ 1% 0.62W 0603
3309	4822 051 30181	180Ω 5% 0.062W
3310	4822 117 12864	82kΩ 5% 0.6W
3311	4822 051 30682	6.8kΩ 5% 0.062W
3315	5322 117 11726	10Ω 5%
3318	5322 117 11726	10Ω 5%
3325	4822 117 11449	2.2kΩ 5% 0.1W 0805
3327	4822 117 11449	2.2kΩ 5% 0.1W 0805
3328	4822 051 30102	1kΩ 5% 0.062W
3330	5322 117 11726	10Ω 5%
3336	4822 051 30475	4.7MΩ 5% 0.062W 0603
3337	5322 117 11726	10Ω 5%
3340	4822 051 30103	10kΩ 5% 0.062W
3355	5322 117 11726	10Ω 5%
3361	4822 051 30475	4.7MΩ 5% 0.062W 0603
3362	5322 117 11726	10Ω 5%
3401	4822 117 12902	8.2kΩ 1% 0.063W 0603
3402	4822 051 30103	10kΩ 5% 0.062W
3406	4822 117 12903	1.8kΩ 1% 0.063W 0603
3407	4822 117 13632	100kΩ 1% 0.62W 0603
3408	4822 117 13632	100kΩ 1% 0.62W 0603
3409	4822 051 30181	180Ω 5% 0.062W
3410	4822 117 12864	82kΩ 5% 0.6W
3411	4822 051 30153	15kΩ 5% 0.062W
3415	5322 117 11726	10Ω 5%
3418	5322 117 11726	10Ω 5%
3425	4822 117 11449	2.2kΩ 5% 0.1W 0805
3427	4822 117 11449	2.2kΩ 5% 0.1W 0805
3428	4822 051 30102	1kΩ 5% 0.062W
3430	5322 117 11726	10Ω 5%
3436	4822 051 30475	4.7MΩ 5% 0.062W 0603
3437	5322 117 11726	10Ω 5%
3440	4822 051 30103	10kΩ 5% 0.062W
3455	5322 117 11726	10Ω 5%
3461	4822 051 30475	4.7MΩ 5% 0.062W 0603
3462	5322 117 11726	10Ω 5%
3501	4822 117 12902	8.2kΩ 1% 0.063W 0603
3502	4822 051 30103	10kΩ 5% 0.062W
3506	4822 117 12903	1.8kΩ 1% 0.063W 0603
3507	4822 117 13632	100kΩ 1% 0.62W 0603
3508	4822 117 13632	100kΩ 1% 0.62W 0603
3509	4822 051 30181	180Ω 5% 0.062W
3510	4822 117 12864	82kΩ 5% 0.6W
3511	4822 051 30682	6.8kΩ 5% 0.062W
3515	5322 117 11726	10Ω 5%
3518	5322 117 11726	10Ω 5%
3525	4822 117 11449	2.2kΩ 5% 0.1W 0805
3527	4822 117 11449	2.2kΩ 5% 0.1W 0805
3528	4822 051 30102	1kΩ 5% 0.062W
3530	5322 117 11726	10Ω 5%
3536	4822 051 30475	4.7MΩ 5% 0.062W 0603
3537	5322 117 11726	10Ω 5%
3540	4822 051 30103	10kΩ 5% 0.062W
3555	5322 117 11726	10Ω 5%
3561	4822 051 30475	4.7MΩ 5% 0.062W 0603
3562	5322 117 11726	10Ω 5%
3601	4822 117 12902	8.2kΩ 1% 0.063W 0603

3602	4822 051 30103	10kΩ 5% 0.062W
3606	4822 117 12903	1.8kΩ 1% 0.063W 0603
3607	4822 117 13632	100kΩ 1% 0.62W 0603
3608	4822 117 13632	100kΩ 1% 0.62W 0603
3609	4822 051 30181	180Ω 5% 0.062W
3610	4822 117 12864	82kΩ 5% 0.6W
3611	4822 051 30153	15kΩ 5% 0.062W
3615	5322 117 11726	10Ω 5%
3618	5322 117 11726	10Ω 5%
3625	4822 117 11449	2.2kΩ 5% 0.1W 0805
3627	4822 117 11449	2.2kΩ 5% 0.1W 0805
3628	4822 051 30102	1kΩ 5% 0.062W
3630	5322 117 11726	10Ω 5%
3636	4822 051 30475	4.7MΩ 5% 0.062W 0603
3637	5322 117 11726	10Ω 5%
3640	4822 051 30103	10kΩ 5% 0.062W
3655	5322 117 11726	10Ω 5%
3661	4822 051 30475	4.7MΩ 5% 0.062W 0603
3662	5322 117 11726	10Ω 5%
3732	4822 051 30272	2.7kΩ 5% 0.062W
3733	4822 051 30102	1kΩ 5% 0.062W
3742	4822 051 30272	2.7kΩ 5% 0.062W
3743	4822 051 30102	1kΩ 5% 0.062W
3749	4822 051 30103	10kΩ 5% 0.062W
3750	4822 051 30471	470Ω 5% 0.062W
3751	4822 117 12925	47kΩ 1% 0.063W 0603
3752	4822 117 12925	47kΩ 1% 0.063W 0603
3754	4822 051 30102	1kΩ 5% 0.062W
3755	4822 117 13632	100kΩ 1% 0.62W 0603
3760	4822 051 30471	470Ω 5% 0.062W
3765	4822 117 13632	100kΩ 1% 0.62W 0603
3770	4822 117 13632	100kΩ 1% 0.62W 0603
3771	4822 117 13632	100kΩ 1% 0.62W 0603
3780	4822 117 13632	100kΩ 1% 0.62W 0603
3781	4822 117 13632	100kΩ 1% 0.62W 0603

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5335	4822 157 11717	Filt. BLM31P500SPT
5360	4822 157 11717	Filt. BLM31P500SPT
5365	2422 536 00338	33µH 10% SMD 10mm
5435	4822 157 11717	Filt. BLM31P500SPT
5460	4822 157 11717	Filt. BLM31P500SPT
5465	2422 536 00338	33µH 10% SMD 10mm
5535	4822 157 11717	Filt. BLM31P500SPT
5560	4822 157 11717	Filt. BLM31P500SPT
5565	2422 536 00338	33µH 10% SMD 10mm
5635	4822 157 11717	Filt. BLM31P500SPT
5660	4822 157 11717	Filt. BLM31P500SPT
5665	2422 536 00338	33µH 10% SMD 10mm
5714	4822 157 11717	Filt. BLM31P500SPT
5719	4822 157 11717	Filt. BLM31P500SPT
5725	4822 157 11717	Filt. BLM31P500SPT
5753	2422 549 43769	Bead 30Ω at 100MHz

▶|

6328	4822 130 11397	BAS316
6334	4822 130 11148	UDZ4.7B
6335	4822 130 11148	UDZ4.7B
6355	4822 130 11148	UDZ4.7B
6356	4822 130 11148	UDZ4.7B
6359	4822 130 11148	UDZ4.7B
6360	4822 130 11148	UDZ4.7B
6428	4822 130 11397	BAS316
6434	4822 130 11148	UDZ4.7B
6435	4822 130 11148	UDZ4.7B
6455	4822 130 11148	UDZ4.7B
6456	4822 130 11148	UDZ4.7B
6459	4822 130 11148	UDZ4.7B
6460	4822 130 11148	UDZ4.7B
6528	4822 130 11397	BAS316
6534	4822 130 11148	UDZ4.7B
6535	4822 130 11148	UDZ4.7B
6555	4822 130 11148	UDZ4.7B
6556	4822 130 11148	UDZ4.7B
6559	4822 130 11148	UDZ4.7B
6560	4822 130 11148	UDZ4.7B
6628	4822 130 11397	BAS316
6634	4822 130 11148	UDZ4.7B
6635	4822 130 11148	UDZ4.7B
6655	4822 130 11148	UDZ4.7B
6656	4822 130 11148	UDZ4.7B
6659	4822 130 11148	UDZ4.7B
6660	4822 130 11148	UDZ4.7B
6732	4822 130 11551	UDZS10B
6742	4822 130 11551	UDZS10B
6750	4822 130 10328	BAV99W
6760	4822 130 10328	BAV99W

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7211	5322 130 42756	BC857C
7225	4822 209 30095	LM833D
7238	4822 209 30095	LM833D
7260	4822 209 30095	LM833D
7302	3198 010 42310	BC847BW
7315	9338 028 20668	LM311D
7330	4822 130 42804	BC817-25
7340	3198 010 42310	BC847BW
7355	5322 130 60845	BC807-25
7365	9322 161 86668	IRF7343
7402	3198 010 42310	BC847BW
7415	9338 028 20668	LM311D
7430	4822 130 42804	BC817-25
7440	3198 010 42310	BC847BW
7455	5322 130 60845	BC807-25
7465	9322 161 86668	IRF7343
7502	3198 010 42310	BC847BW
7515	9338 028 20668	LM311D
7530	4822 130 42804	BC817-25
7540	3198 010 42310	BC847BW
7555	5322 130 60845	BC807-25
7565	9322 161 86668	IRF7343
7602	3198 010 42310	BC847BW
7615	9338 028 20668	LM311D
7630	4822 130 42804	BC817-25
7640	3198 010 42310	BC847BW
7655	5322 130 60845	BC807-25
7665	9322 161 86668	IRF7343
7735	4822 130 60142	BC869
7736	3198 010 42310	BC847BW
7745	5322 130 61569	BC868
7746	5322 130 42756	BC857C
7751	3198 010 42310	BC847BW
7753	5322 130 42756	BC857C
7755	3198 010 42310	BC847BW
7761	5322 130 42756	BC857C

Small Signal Panel (AA) [B]

Various

0067	3104 304 22841	FFC relieve
0074	3104 301 24221	Cover SSB Z-side
0075	3104 301 24201	Frame SSB Z-side
0077	3104 301 24451	Frame SSB A-side
0078	3104 301 24461	Cover SSB A-side
0080	3104 301 24471	Frame SSB Z-side
0305	3104 304 23841	Xtal grommet
0308	3104 304 23841	Xtal grommet
0325	2422 034 21798	Screwlock
0603	3104 317 05161	Software DDC(Check Prod Surv)
1001	2422 543 89022	Xtal 6MHz 20pF CX5F
1305	2422 543 01184	Xtal 4.433619MHz 20pF
1308	2422 543 01183	Xtal 3.579545MHz 16pF
1402	2422 127 00543	Switch 1p 2pos
1403	2422 086 11092	Fuse F0.5A 50V 1206
1407	2422 549 44324	Filt. TPWCC04BS
1408	2422 549 44372	SAW 38.9MHz K3953L
1409	2422 549 44369	SAW 38.9MHz K9656L
1702	2422 540 98456	Resonator 12MHz
1A00	2422 543 89019	Xtal 18.432MHz 12pF
1D01	2422 025 16984	Connector 15p f
1E02	2422 025 17274	Connector 10p m
1E04	2422 025 17103	Connector 3p m
1I01	4822 267 10771	Socket 2 x SCART
1I04	4822 267 10771	Socket 2 x SCART
1I05	2422 026 05213	Socket 3p BkWhRd
1I07	2422 026 05501	Socket CINCH 6p f
1I19	4822 267 10748	Connector 3p m
1I70	2422 025 16966	Connector 5p m SMD
1S20	2422 025 10771	Connector 10p m
1S36	2422 025 10655	Connector 11p m
1S43	2422 025 10768	Connector 3p m
1S46	4822 267 10637	Connector 5p m
1S88	4822 265 11352	Connector 8p
1T01	3139 147 19341	Tuner UV1318S/A I-3
1U01▲	2422 086 11021	Fuse 800 mA 63V SM T
1Y01	2422 025 17706	Connector 20p m
1Y45	2422 025 17103	Connector 3p m
1Y55	2422 025 17192	Connector 9p m
8190	3104 311 06181	Cable 2p3/80 inlet

⊣⊢

2000	4822 124 12095	100µF 20% 16V
2001	4822 124 12095	100µF 20% 16V
2002	4822 126 11669	27pF 5% 50V 0603
2003	4822 126 13879	220nF 20% 16V
2004	4822 126 13879	220nF 20% 16V
2005	2238 586 59812	100nF 20-80% 50V 0603
2006	2238 586 59812	100nF 20-80% 50V 0603
2007	2238 586 59812	100nF 20-80% 50V 0603
2008	2238 586 59812	100nF 20-80% 50V 0603
2010	4822 126 11785	47pF 5% 50V 0603
2011	4822 126 11785	47pF 5% 50V 0603
2012	4822 126 11785	47pF 5% 50V 0603
2013	2020 021 91557	100µF 20% 16V
2016	4822 124 12095	100µF 20% 16V
2017	2238 586 59812	100nF 20-80% 50V 0603
2018	2222 867 15339	33pF 5% 50V 0603
2019	2238 586 59812	100nF 20-80% 50V 0603
2020	4822 126 13883	220pF 5% 50V
2022	2238 586 59812	100nF 20-80% 50V 0603
2023	2238 586 59812	100nF 20-80% 50V 0603
2024	2238 586 59812	100nF 20-80% 50V 0603
2025	2238 586 59812	100nF 20-80% 50V 0603
2026	2238 586 59812	100nF 20-80% 50V 0603
2027	2238 586 59812	100nF 20-80% 50V 0603
2028	2238 586 59812	100nF 20-80% 50V 0603
2029	2238 586 59812	100nF 20-80% 50V 0603
2031	2238 586 59812	100nF 20-80% 50V 0603
2033	4822 126 14226	82pF 5% 50V 0603
2034	4822 126 14226	82pF 5% 50V 0603
2035	4822 126 14226	82pF 5% 50V 0603
2036	4822 126 14226	82pF 5% 50V 0603
2037	4822 126 14226	82pF 5% 50V 0603
2038	2238 586 59812	100nF 20-80% 50V 0603
2039	2238 586 59812	100nF 20-80% 50V 0603
2040	2238 586 59812	100nF 20-80% 50V 0603
2063	3198 017 34730	47nF 16V 0603
2067	2238 586 59812	100nF 20-80% 50V 0603
2074	2238 586 59812	100nF 20-80% 50V 0603
2302	2238 586 59812	100nF 20-80% 50V 0603
2305	2238 586 59812	100nF 20-80% 50V 0603
2316	2238 586 59812	100nF 20-80% 50V 0603
2322	2238 586 59812	100nF 20-80% 50V 0603
2340	2020 021 91557	100µF 20% 16V
2350	2238 586 59812	100nF 20-80% 50V 0603
2351	2238 586 59812	100nF 20-80% 50V 0603
2352	2238 586 59812	100nF 20-80% 50V 0603
2353	2238 586 59812	100nF 20-80% 50V 0603
2354	2238 586 59812	100nF 20-80% 50V 0603
2356	2238 586 59812	100nF 20-80% 50V 0603
2357	2238 586 59812	100nF 20-80% 50V 0603
2358	5322 126 11579	3.3nF 10% 63V
2359	4822 122 33752	15pF 5% 50V
2360	3198 016 31280	1.2pF 50V 0603
2361	3198 016 31280	1.2pF 50V 0603
2362	4822 126 11663	12pF 5% 50V 0603
2365	2238 586 59812	100nF 20-80% 50V 0603
2366	2238 586 59812	100nF 20-80% 50V 0603
2367	2238 586 59812	100nF 20-80% 50V 0603
2368	2238 586 59812	100nF 20-80% 50V 0603
2369	2238 586 59812	100nF 20-80% 50V 0603
2370	2238 586 59812	100nF 20-80% 50V 0603
2371	4822 126 13193	4.7nF 10% 63V
2372	2020 552 96448	1µF 10% 16V
2373	2238 586 59812	100nF 20-80% 50V 0603
2374	4822 126 14491	2.2µF -20+80% 10V 0805
2375	2238 916 15641	22nF 10% 25V 0603
2376	2238 586 59812	100nF 20-80% 50V 0603
2377	2020 021 91557	100µF 20% 16V
2378	2238 586 59812	100nF 20-80% 50V 0603
2384	2238 586 59812	100nF 20-80% 50V 0603
2385	2238 586 59812	100nF 20-80% 50V 0603
2390	2238 586 59812	100nF 20-80% 50V 0603
2391	2238 586 59812	100nF 20-80% 50V 0603
2394	4822 126 14491	2.2µF -20+80% 10V 0805
2403	2238 586 59812	100nF 20-80% 50V 0603
2404	2020 552 96448	1µF 10% 16V
2405	4822 126 13193	4.7nF 10% 63V
2406	4822 126 13883	220pF 5% 50V
2407	4822 126 13956	68pF 5% 63V 0603
2408	3198 016 33380	3.3pF 50V 0603
2409	4822 126 14491	2.2µF -20+80% 10V 0805
2410	2020 021 91557	100µF 20% 16V
2411	2238 586 59812	100nF 20-80% 50V 0603
2412	4822 126 13193	4.7nF 10% 63V
2414	2020 021 91557	100µF 20% 16V
2415	2238 586 59812	100nF 20-80% 50V 0603
2417	3198 017 44740	470nF 10V 0603
2418	3198 016 35680	5.6pF 0.5pF 50V 0603
2422	2238 586 59812	100nF 20-80% 50V 0603
2424	2238 586 59812	100nF 20-80% 50V 0603
2425	2020 021 91557	100µF 20% 16V
2432	2238 586 59812	100nF 20-80% 50V 0603
2433	2238 586 59812	100nF 20-80% 50V 0603
2709	2238 586 59812	100nF 20-80% 50V 0603
2710	2238 586 59812	100nF 20-80% 50V 0603
2711	2238 586 59812	100nF 20-80% 50V 0603
2712	2238 586 59812	100nF 20-80% 50V 0603

2713	4822 122 33761	22pF 5% 50V
2714	4822 122 33761	22pF 5% 50V
2715	2238 586 59812	100nF 20-80% 50V 0603
2716	2238 586 59812	100nF 20-80% 50V 0603
2718	4822 122 33752	15pF 5% 50V
2719	4822 122 33752	15pF 5% 50V
2720	4822 122 33752	15pF 5% 50V
2721	2020 552 94427	100pF 5% 50v 0603
2722	2020 552 94427	100pF 5% 50v 0603
2723	3198 016 31020	1nF 10% 25V 0603
2724	2238 586 59812	100nF 20-80% 50V 0603
2728	2020 021 91554	10μF 20% 16V
2729	2238 586 59812	100nF 20-80% 50V 0603
2730	2020 021 91557	100μF 20% 16V
2731	2238 586 59812	100nF 20-80% 50V 0603
2732	2238 586 59812	100nF 20-80% 50V 0603
2733	2238 586 59812	100nF 20-80% 50V 0603
2734	2238 586 59812	100nF 20-80% 50V 0603
2735	2238 586 59812	100nF 20-80% 50V 0603
2740	2238 916 15641	22nF 10% 25V 0603
2741	2238 916 15641	22nF 10% 25V 0603
2742	2238 916 15641	22nF 10% 25V 0603
2743	2238 586 59812	100nF 20-80% 50V 0603
2744	2238 586 59812	100nF 20-80% 50V 0603
2745	2238 586 59812	100nF 20-80% 50V 0603
2746	2238 586 59812	100nF 20-80% 50V 0603
2747	2238 586 59812	100nF 20-80% 50V 0603
2748	2238 586 59812	100nF 20-80% 50V 0603
2749	2020 021 91554	10μF 20% 16V
2750	2238 586 59812	100nF 20-80% 50V 0603
2751	2238 586 59812	100nF 20-80% 50V 0603
2752	2238 586 59812	100nF 20-80% 50V 0603
2753	2238 586 59812	100nF 20-80% 50V 0603
2754	2238 586 59812	100nF 20-80% 50V 0603
2755	2238 586 59812	100nF 20-80% 50V 0603
2756	2238 586 59812	100nF 20-80% 50V 0603
2757	2238 916 15641	22nF 10% 25V 0603
2760	2238 586 59812	100nF 20-80% 50V 0603
2761	2238 586 59812	100nF 20-80% 50V 0603
2762	2238 586 59812	100nF 20-80% 50V 0603
2763	2238 586 59812	100nF 20-80% 50V 0603
2764	2238 586 59812	100nF 20-80% 50V 0603
2765	2238 586 59812	100nF 20-80% 50V 0603
2766	2238 586 59812	100nF 20-80% 50V 0603
2767	2238 586 59812	100nF 20-80% 50V 0603
2768	2238 586 59812	100nF 20-80% 50V 0603
2769	2238 586 59812	100nF 20-80% 50V 0603
2770	2020 021 91554	10μF 20% 16V
2771	2238 586 59812	100nF 20-80% 50V 0603
2772	2020 021 91557	100μF 20% 16V
2773	2238 586 59812	100nF 20-80% 50V 0603
2774	2238 586 59812	100nF 20-80% 50V 0603
2775	2238 586 59812	100nF 20-80% 50V 0603
2776	2238 586 59812	100nF 20-80% 50V 0603
2777	2238 586 59812	100nF 20-80% 50V 0603
2778	2238 586 59812	100nF 20-80% 50V 0603
2779	2238 586 59812	100nF 20-80% 50V 0603
2780	2238 586 59812	100nF 20-80% 50V 0603
2781	2238 586 59812	100nF 20-80% 50V 0603
2782	2238 586 59812	100nF 20-80% 50V 0603
2784	2238 586 59812	100nF 20-80% 50V 0603
2785	2238 586 59812	100nF 20-80% 50V 0603
2786	2238 586 59812	100nF 20-80% 50V 0603
2787	2238 586 59812	100nF 20-80% 50V 0603
2788	2238 586 59812	100nF 20-80% 50V 0603
2789	2238 586 59812	100nF 20-80% 50V 0603
2790	2238 586 59812	100nF 20-80% 50V 0603
2791	2238 586 59812	100nF 20-80% 50V 0603
2792	2020 021 91554	10μF 20% 16V
2793	2238 586 59812	100nF 20-80% 50V 0603
2794	2020 021 91554	10μF 20% 16V
2795	2238 586 59812	100nF 20-80% 50V 0603
2796	2238 586 59812	100nF 20-80% 50V 0603
2797	2238 586 59812	100nF 20-80% 50V 0603
2798	2238 586 59812	100nF 20-80% 50V 0603
2799	2238 586 59812	100nF 20-80% 50V 0603
2800	2238 586 59812	100nF 20-80% 50V 0603
2801	2238 586 59812	100nF 20-80% 50V 0603
2802	2238 586 59812	100nF 20-80% 50V 0603
2803	2238 586 59812	100nF 20-80% 50V 0603
2804	2238 586 59812	100nF 20-80% 50V 0603
2805	2238 586 59812	100nF 20-80% 50V 0603
2806	2238 586 59812	100nF 20-80% 50V 0603
2807	2238 586 59812	100nF 20-80% 50V 0603
2808	2020 021 91554	10μF 20% 16V
2809	2238 586 59812	100nF 20-80% 50V 0603
2810	2238 586 59812	100nF 20-80% 50V 0603
2811	2238 586 59812	100nF 20-80% 50V 0603
2812	2238 586 59812	100nF 20-80% 50V 0603
2813	2238 586 59812	100nF 20-80% 50V 0603
2817	2238 586 59812	100nF 20-80% 50V 0603
2819	2238 586 59812	100nF 20-80% 50V 0603
2820	2238 586 59812	100nF 20-80% 50V 0603
2821	2238 586 59812	100nF 20-80% 50V 0603
2822	2238 586 59812	100nF 20-80% 50V 0603
2823	5322 126 11578	1nF 10% 50V 0603
2824	5322 126 11578	1nF 10% 50V 0603
2825	2238 586 59812	100nF 20-80% 50V 0603
2826	2238 586 59812	100nF 20-80% 50V 0603
2829	2238 586 59812	100nF 20-80% 50V 0603
2831	4822 126 13956	68pF 5% 63V 0603
2832	2238 586 59812	100nF 20-80% 50V 0603
2833	2238 586 59812	100nF 20-80% 50V 0603
2834	2238 586 59812	100nF 20-80% 50V 0603
2835	2238 586 59812	100nF 20-80% 50V 0603
2836	2238 586 59812	100nF 20-80% 50V 0603
2837	2238 586 59812	100nF 20-80% 50V 0603
2838	2238 586 59812	100nF 20-80% 50V 0603
2842	2238 586 59812	100nF 20-80% 50V 0603
2843	2238 586 59812	100nF 20-80% 50V 0603
2844	2238 586 59812	100nF 20-80% 50V 0603
2845	2238 586 59812	100nF 20-80% 50V 0603
2846	2238 586 59812	100nF 20-80% 50V 0603
2847	2238 586 59812	100nF 20-80% 50V 0603
2848	2238 586 59812	100nF 20-80% 50V 0603
2851	2238 586 59812	100nF 20-80% 50V 0603
2852	2238 586 59812	100nF 20-80% 50V 0603
2853	2238 586 59812	100nF 20-80% 50V 0603
2854	2238 586 59812	100nF 20-80% 50V 0603
2855	2238 586 59812	100nF 20-80% 50V 0603
2857	2238 586 59812	100nF 20-80% 50V 0603
2858	4822 124 12095	100μF 20% 16V
2859	2238 586 59812	100nF 20-80% 50V 0603
2860	2238 586 59812	100nF 20-80% 50V 0603
2861	2238 586 59812	100nF 20-80% 50V 0603
2862	2238 586 59812	100nF 20-80% 50V 0603
2863	2238 586 59812	100nF 20-80% 50V 0603
2864	2238 586 59812	100nF 20-80% 50V 0603
2865	2238 586 59812	100nF 20-80% 50V 0603
2866	2238 586 59812	100nF 20-80% 50V 0603
2867	2238 586 59812	100nF 20-80% 50V 0603
2870	2020 021 91554	10μF 20% 16V
2871	2020 021 91557	100μF 20% 16V
2872	2238 586 59812	100nF 20-80% 50V 0603
2874	2020 021 91554	10μF 20% 16V
2877	2020 021 91557	100μF 20% 16V
2880	2020 021 91554	10μF 20% 16V
2881	4822 126 11669	27pF 5% 50V 0603
2884	2238 586 59812	100nF 20-80% 50V 0603
2886	2238 586 59812	100nF 20-80% 50V 0603
2887	2238 586 59812	100nF 20-80% 50V 0603
2888	2238 586 59812	100nF 20-80% 50V 0603
2889	2238 586 59812	100nF 20-80% 50V 0603
2890	2238 586 59812	100nF 20-80% 50V 0603
2891	2238 586 59812	100nF 20-80% 50V 0603
2892	2238 586 59812	100nF 20-80% 50V 0603
2893	2238 586 59812	100nF 20-80% 50V 0603
2894	2238 586 59812	100nF 20-80% 50V 0603
2895	2238 586 59812	100nF 20-80% 50V 0603
2896	2238 586 59812	100nF 20-80% 50V 0603
2897	2238 586 59812	100nF 20-80% 50V 0603
2898	2238 586 59812	100nF 20-80% 50V 0603
2899	2238 586 59812	100nF 20-80% 50V 0603
2A00	2020 552 96618	1nF 10% 50V 0402
2A01	2020 021 91557	100μF 20% 16V
2A02	2020 552 96448	1μF 10% 16V
2A03	2020 021 91557	100μF 20% 16V
2A04	2020 552 96448	1μF 10% 16V
2A05	2020 021 91557	100μF 20% 16V
2A06	2020 552 96618	1nF 10% 50V 0402
2A07	2020 021 91557	100μF 20% 16V
2A08	2020 552 96448	1μF 10% 16V
2A10	2238 586 59812	100nF 20-80% 50V 0603
2A11	2238 586 59812	100nF 20-80% 50V 0603
2A13	2020 552 96618	1nF 10% 50V 0402
2A14	2020 552 96618	1nF 10% 50V 0402
2A15	2020 021 91557	100μF 20% 16V
2A16	2238 586 59812	100nF 20-80% 50V 0603
2A17	2020 552 96618	1nF 10% 50V 0402
2A18	2020 021 91557	100μF 20% 16V
2A19	3198 017 41050	1μF 10V 0603
2A21	2238 586 59812	100nF 20-80% 50V 0603
2A22	2238 586 59812	100nF 20-80% 50V 0603
2A23	2238 586 59812	100nF 20-80% 50V 0603
2A26	2238 586 59812	100nF 20-80% 50V 0603
2A27	2020 552 96618	1nF 10% 50V 0402
2A29	2238 869 15101	100pF 5% 50V 0402
2A30	2238 869 15101	100pF 5% 50V 0402
2A31	2238 586 59812	100nF 20-80% 50V 0603
2A32	2238 869 15101	100pF 5% 50V 0402
2A33	2238 586 59812	100nF 20-80% 50V 0603
2A34	2238 869 15101	100pF 5% 50V 0402
2A35	2020 552 96618	1nF 10% 50V 0402
2A36	2238 869 15101	100pF 5% 50V 0402
2A37	2238 869 15101	100pF 5% 50V 0402
2A38	2238 869 15101	100pF 5% 50V 0402
2A39	2020 552 96448	1μF 10% 16V
2A40	2238 586 59812	100nF 20-80% 50V 0603
2A41	2020 021 91554	10μF 20% 16V
2A42	2020 021 91554	10μF 20% 16V
2A43	2020 021 91554	10μF 20% 16V
2A44	2238 586 59812	100nF 20-80% 50V 0603
2A46	2020 552 96448	1μF 10% 16V
2A47	2020 552 96618	1nF 10% 50V 0402
2A48	2020 552 96618	1nF 10% 50V 0402
2A49	2020 552 96448	1μF 10% 16V
2A50	2020 552 96618	1nF 10% 50V 0402
2A51	2020 552 96618	1nF 10% 50V 0402
2A52	2020 552 96618	1nF 10% 50V 0402
2A54	2020 552 96618	1nF 10% 50V 0402
2A57	2020 552 96618	1nF 10% 50V 0402
2A59	2020 552 96448	1μF 10% 16V
2A60	2020 552 96618	1nF 10% 50V 0402
2A61	2020 552 96618	1nF 10% 50V 0402
2A62	2020 552 96448	1μF 10% 16V
2A63	2020 552 96618	1nF 10% 50V 0402
2A65	2020 552 96618	1nF 10% 50V 0402
2A67	2020 552 96448	1μF 10% 16V
2A68	2020 552 96618	1nF 10% 50V 0402
2A71	2020 552 96448	1μF 10% 16V
2A73	2020 552 96618	1nF 10% 50V 0402
2A77	2020 552 96618	1nF 10% 50V 0402
2A78	2020 552 96618	1nF 10% 50V 0402
2A79	2238 586 59812	100nF 20-80% 50V 0603
2A82	3198 017 31530	15nF 20% 50V 0603
2A87	2020 552 96618	1nF 10% 50V 0402
2A91	2020 552 96448	1μF 10% 16V
2A92	2020 552 96448	1μF 10% 16V
2A95	4822 126 13883	220pF 5% 50V
2A99	2238 869 15101	100pF 5% 50V 0402
2AA0	2238 869 15101	100pF 5% 50V 0402
2AA1	2238 869 15101	100pF 5% 50V 0402
2AA5	2238 869 15101	100pF 5% 50V 0402
2AA6	2020 552 96618	1nF 10% 50V 0402
2AA7	2020 552 96618	1nF 10% 50V 0402
2AA8	2020 552 96618	1nF 10% 50V 0402
2AA9	3198 016 35680	5.6pF 0.5pF 50V 0603
2AB0	3198 016 35680	5.6pF 0.5pF 50V 0603
2AB2	2020 552 96618	1nF 10% 50V 0402
2AB3	2020 552 96448	1μF 10% 16V
2AB4	2020 552 96448	1μF 10% 16V
2AB5	2020 021 91554	10μF 20% 16V
2AB8	2020 552 96448	1μF 10% 16V
2C00	2238 586 59812	100nF 20-80% 50V 0603
2C01	2238 586 59812	100nF 20-80% 50V 0603
2C02	2238 586 59812	100nF 20-80% 50V 0603
2D01	2238 869 15101	100pF 5% 50V 0402
2D03	2020 552 96618	1nF 10% 50V 0402
2D04	2020 552 96618	1nF 10% 50V 0402
2D09	2238 586 59812	100nF 20-80% 50V 0603
2D10	2238 586 59812	100nF 20-80% 50V 0603
2D11	2238 586 59812	100nF 20-80% 50V 0603
2D12	2238 586 59812	100nF 20-80% 50V 0603
2D22	2238 586 59812	100nF 20-80% 50V 0603
2D50	4822 126 13879	220nF 20% 16V
2D51	2238 586 59812	100nF 20-80% 50V 0603
2D52	2238 586 59812	100nF 20-80% 50V 0603
2D53	2022 552 05616	4.7μF 5% 6.3V
2D54	2022 552 05616	4.7μF 5% 6.3V
2D55	2022 552 05616	4.7μF 5% 6.3V
2D57	2238 586 59812	100nF 20-80% 50V 0603
2D58	2022 552 05616	4.7μF 5% 6.3V
2D59	2022 552 05616	4.7μF 5% 6.3V
2D60	2022 552 05616	4.7μF 5% 6.3V
2D61	2022 552 05616	4.7μF 5% 6.3V
2D62	4822 126 13879	220nF 20% 16V
2D63	2022 552 05616	4.7μF 5% 6.3V
2D64	2022 552 05616	4.7μF 5% 6.3V
2D65	3198 032 47170	47μF 20% 16V
2D66	2238 586 59812	100nF 20-80% 50V 0603
2D67	2238 586 59812	100nF 20-80% 50V 0603
2D68	2238 586 59812	100nF 20-80% 50V 0603
2D69	3198 016 31020	1nF 10% 25V 0603
2D70	2238 586 59812	100nF 20-80% 50V 0603
2D72	4822 126 11785	47pF 5% 50V 0603
2D73	4822 126 11785	47pF 5% 50V 0603
2D74	3198 032 47170	47μF 20% 16V
2D75	2238 586 59812	100nF 20-80% 50V 0603
2D76	2022 552 05616	4.7μF 5% 6.3V
2D77	2238 586 59812	100nF 20-80% 50V 0603
2D78	2238 586 59812	100nF 20-80% 50V 0603
2E02	4822 124 23237	22μF 20% 6.3V
2E04	3198 035 04710	470pF 50V 0402
2E05	4822 124 23237	22μF 20% 6.3V
2E09	4822 124 23237	22μF 20% 6.3V
2E10	2238 586 59812	100nF 20-80% 50V 0603
2E11	4822 124 23237	22μF 20% 6.3V
2E12	2022 552 05616	4.7μF 5% 6.3V
2E13	3198 035 04710	470pF 50V 0402
2E14	2238 586 59812	100nF 20-80% 50V 0603
2E15	2238 586 59812	100nF 20-80% 50V 0603
2E16	3198 035 04710	470pF 50V 0402

2E17	2022 552 05616	4.7µF 5% 6.3V
2E18	2022 552 05616	4.7µF 5% 6.3V
2E19	2238 586 59812	100nF 20-80% 50V 0603
2E20	2238 586 59812	100nF 20-80% 50V 0603
2E21	2238 586 59812	100nF 20-80% 50V 0603
2E22	2020 552 96448	1µF 10% 16V
2E23	2238 586 59812	100nF 20-80% 50V 0603
2E24	2238 586 59812	100nF 20-80% 50V 0603
2E25	2238 586 59812	100nF 20-80% 50V 0603
2E26	2022 552 05616	4.7µF 5% 6.3V
2E27	3198 035 04710	470pF 50V 0402
2E28	2238 586 59812	100nF 20-80% 50V 0603
2E29	3198 035 04710	470pF 50V 0402
2E30	2022 552 05616	4.7µF 5% 6.3V
2E34	2020 004 90283	10µF 20% 10V 1206
2E35	2238 586 59812	100nF 20-80% 50V 0603
2E37	4822 124 23237	22µF 20% 6.3V
2E39	2022 552 05616	4.7µF 5% 6.3V
2E50	4822 124 23237	22µF 20% 6.3V
2E51	2020 552 96448	1µF 10% 16V
2E52	2238 586 59812	100nF 20-80% 50V 0603
2E54	2238 586 59812	100nF 20-80% 50V 0603
2E55	2022 552 05616	4.7µF 5% 6.3V
2E56	2238 586 59812	100nF 20-80% 50V 0603
2E58	2238 586 59812	100nF 20-80% 50V 0603
2E59	2238 586 59812	100nF 20-80% 50V 0603
2E61	2238 586 59812	100nF 20-80% 50V 0603
2E62	2238 586 59812	100nF 20-80% 50V 0603
2E63	2238 586 59812	100nF 20-80% 50V 0603
2E64	2238 586 59812	100nF 20-80% 50V 0603
2E66	2238 586 59812	100nF 20-80% 50V 0603
2E68	2022 552 05616	4.7µF 5% 6.3V
2E69	2238 586 59812	100nF 20-80% 50V 0603
2E70	2238 586 59812	100nF 20-80% 50V 0603
2E71	2238 586 59812	100nF 20-80% 50V 0603
2E72	2238 586 59812	100nF 20-80% 50V 0603
2E73	2238 586 59812	100nF 20-80% 50V 0603
2E74	2238 586 59812	100nF 20-80% 50V 0603
2E75	2238 586 59812	100nF 20-80% 50V 0603
2E76	2238 586 59812	100nF 20-80% 50V 0603
2E78	2238 586 59812	100nF 20-80% 50V 0603
2E79	2238 586 59812	100nF 20-80% 50V 0603
2E80	2238 586 59812	100nF 20-80% 50V 0603
2E83	2238 586 59812	100nF 20-80% 50V 0603
2E84	2238 586 59812	100nF 20-80% 50V 0603
2E86	2238 586 59812	100nF 20-80% 50V 0603
2E87	4822 124 12095	100µF 20% 16V
2E88	2238 869 15101	100pF 5% 50V 0402
2E89	2238 869 15101	100pF 5% 50V 0402
2E90	2238 869 15101	100pF 5% 50V 0402
2E91	2238 869 15101	100pF 5% 50V 0402
2E92	2238 869 15101	100pF 5% 50V 0402
2E93	2238 869 15101	100pF 5% 50V 0402
2E94	2238 869 15101	100pF 5% 50V 0402
2E95	2238 869 15101	100pF 5% 50V 0402
2E96	2238 869 15101	100pF 5% 50V 0402
2E97	2238 869 15101	100pF 5% 50V 0402
2E98	2238 869 15101	100pF 5% 50V 0402
2E99	2238 869 15101	100pF 5% 50V 0402
2I07	4822 051 30008	Jumper 0603
2I09	2020 552 94427	100pF 5% 50v 0603
2I10	2020 552 94427	100pF 5% 50v 0603
2I11	2020 552 94427	100pF 5% 50v 0603
2I12	4822 126 14241	330pF 50V 0603
2I13	2020 552 94427	100pF 5% 50v 0603
2I14	2020 552 94427	100pF 5% 50v 0603
2I15	4822 126 14241	330pF 50V 0603
2I16	2020 552 94427	100pF 5% 50v 0603
2I17	2020 552 94427	100pF 5% 50v 0603
2I18	2020 552 94427	100pF 5% 50v 0603
2I19	2020 552 94427	100pF 5% 50v 0603
2I20	4822 126 14241	330pF 50V 0603
2I21	2020 552 94427	100pF 5% 50v 0603
2I22	2020 552 94427	100pF 5% 50v 0603
2I23	2020 552 94427	100pF 5% 50v 0603
2I24	2020 552 94427	100pF 5% 50v 0603
2I25	4822 126 14241	330pF 50V 0603
2I26	2020 552 94427	100pF 5% 50v 0603
2I27	2020 552 94427	100pF 5% 50v 0603
2I36	2020 552 94427	100pF 5% 50v 0603
2I39	3198 024 44730	47nF 50V 0603
2I46	3198 016 31020	1nF 10% 25V 0603
2I47	3198 016 31020	1nF 10% 25V 0603
2I57	2020 552 94427	100pF 5% 50v 0603
2I58	2020 552 94427	100pF 5% 50v 0603
2I71	2020 552 96448	1µF 10% 16V
2I72	2020 552 96448	1µF 10% 16V
2I73	2020 552 96448	1µF 10% 16V
2I74	2020 552 96448	1µF 10% 16V
2I75	2020 552 96448	1µF 10% 16V
2I76	2020 552 96448	1µF 10% 16V
2I77	2020 552 96448	1µF 10% 16V
2I78	2020 552 96448	1µF 10% 16V
2I79	2020 021 91685	22µF 20% 16V

2I80	2020 552 96448	1µF 10% 16V
2I81	2020 552 96448	1µF 10% 16V
2I82	2020 552 96448	1µF 10% 16V
2I83	2020 552 96448	1µF 10% 16V
2I84	2020 552 96448	1µF 10% 16V
2I85	2020 552 96448	1µF 10% 16V
2I99	2020 552 96448	1µF 10% 16V
2IA0	2020 552 96448	1µF 10% 16V
2IA1	2020 552 96448	1µF 10% 16V
2IA2	2020 552 96448	1µF 10% 16V
2IA4	2020 552 96448	1µF 10% 16V
2IA5	2020 021 91557	100µF 20% 16V
2IA7	2020 552 96448	1µF 10% 16V
2IA9	2020 021 91557	100µF 20% 16V
2IC0	4822 124 23002	10µF 20% 16V
2IC1	4822 124 23002	10µF 20% 16V
2IC3	2238 586 59812	100nF 20-80% 50V 0603
2IC9	4822 126 13881	470pF 5% 50V
2IG1	2238 586 59812	100nF 20-80% 50V 0603
2IH2	2238 586 59812	100nF 20-80% 50V 0603
2IH3	3198 016 31020	1nF 10% 25V 0603
2IJ0	4822 126 13881	470pF 5% 50V
2IJ1	2020 552 94427	100pF 5% 50v 0603
2IJ4	2238 586 59812	100nF 20-80% 50V 0603
2L01	3198 035 71040	100nF 10% 16V 0402
2L02	3198 035 71040	100nF 10% 16V 0402
2L03	3198 035 71040	100nF 10% 16V 0402
2L04	3198 035 71040	100nF 10% 16V 0402
2L05	3198 035 71040	100nF 10% 16V 0402
2L06	3198 035 71040	100nF 10% 16V 0402
2L07	3198 035 71040	100nF 10% 16V 0402
2L08	3198 035 71040	100nF 10% 16V 0402
2L09	3198 035 71040	100nF 10% 16V 0402
2L10	3198 035 71040	100nF 10% 16V 0402
2L11	2238 586 59812	100nF 20-80% 50V 0603
2L12	3198 035 71040	100nF 10% 16V 0402
2L13	3198 035 71040	100nF 10% 16V 0402
2L14	3198 035 71040	100nF 10% 16V 0402
2L15	3198 035 71040	100nF 10% 16V 0402
2L16	3198 035 71040	100nF 10% 16V 0402
2L17	3198 035 71040	100nF 10% 16V 0402
2L18	2020 552 96305	4.7µF 20-80% 10V
2L19	4822 124 23002	10µF 20% 16V
2L20	3198 035 71040	100nF 10% 16V 0402
2L21	3198 035 71040	100nF 10% 16V 0402
2L22	5322 126 11583	10nF 10% 50V 0603
2L23	5322 126 11583	10nF 10% 50V 0603
2L24	5322 126 11583	10nF 10% 50V 0603
2L25	2238 586 59812	100nF 20-80% 50V 0603
2L26	4822 126 14549	33nF 16V 0603
2L27	4822 126 13193	4.7nF 10% 63V
2L28	4822 126 14226	82pF 5% 50V 0603
2L29	4822 122 33761	22pF 5% 50V
2L30	4822 126 14226	82pF 5% 50V 0603
2L31	3198 017 34730	47nF 16V 0603
2L32	5322 126 11579	3.3nF 10% 63V
2L33	2238 586 59812	100nF 20-80% 50V 0603
2L34	2238 586 59812	100nF 20-80% 50V 0603
2L35	4822 126 13879	220nF 20% 16V
2L36	3198 016 31020	1nF 10% 25V 0603
2L37	3198 016 31020	1nF 10% 25V 0603
2L38	3198 016 31020	1nF 10% 25V 0603
2L39	2238 586 59812	100nF 20-80% 50V 0603
2L40	2020 552 96305	4.7µF 20-80% 10V
2L41	3198 016 31020	1nF 10% 25V 0603
2L42	3198 016 31020	1nF 10% 25V 0603
2L43	2238 586 59812	100nF 20-80% 50V 0603
2L44	2020 552 96305	4.7µF 20-80% 10V
2L45	3198 016 31020	1nF 10% 25V 0603
2L46	3198 016 31020	1nF 10% 25V 0603
2L47	2238 586 59812	100nF 20-80% 50V 0603
2L48	4822 122 33752	15pF 5% 50V
2L50	4822 122 33752	15pF 5% 50V
2L52	3198 017 34730	47nF 16V 0603
2L53	4822 124 81059	220µF 20% 4V
2L54	3198 017 34730	47nF 16V 0603
2L56	2020 552 96618	1nF 10% 50V 0402
2L57	3198 017 34730	47nF 16V 0603
2L58	4822 124 81059	220µF 20% 4V
2L63	4822 126 11785	47pF 5% 50V 0603
2P80	4822 124 12095	100µF 20% 16V
2P81	2238 586 59812	100nF 20-80% 50V 0603
2S01	2238 586 59812	100nF 20-80% 50V 0603
2S02	2238 586 59812	100nF 20-80% 50V 0603
2S03	2238 586 59812	100nF 20-80% 50V 0603
2S04	2238 586 59812	100nF 20-80% 50V 0603
2S05	2238 586 59812	100nF 20-80% 50V 0603
2S06	2020 552 94427	100pF 5% 50v 0603
2S07	2020 552 94427	100pF 5% 50v 0603
2S08	2020 552 94427	100pF 5% 50v 0603
2S09	2020 552 94427	100pF 5% 50v 0603
2S11	2020 552 94427	100pF 5% 50v 0603
2S13	2020 552 94427	100pF 5% 50v 0603
2S14	2020 552 94427	100pF 5% 50v 0603

2S15	2020 552 94427	100pF 5% 50v 0603
2S16	2020 552 94427	100pF 5% 50v 0603
2S22	3198 017 44740	470nF 10V 0603
2S25	2020 552 94427	100pF 5% 50v 0603
2T01	2020 021 91642	470µF 20% 16V
2T04	3198 024 44730	47nF 50V 0603
2T05	2020 021 91642	470µF 20% 16V
2T06	5322 126 11583	10nF 10% 50V 0603
2T09	3198 017 34730	47nF 16V 0603
2T12	2238 586 59812	100nF 20-80% 50V 0603
2T13	5322 126 11583	10nF 10% 50V 0603
2T15	2020 552 96448	1µF 10% 16V
2U03	2020 552 96448	1µF 10% 16V
2U04	4822 126 13482	470nF 80-20% 16V
2U05	5322 126 11578	1nF 10% 50V 0603
2U06	2020 021 91642	470µF 20% 16V
2U07	4822 126 14226	82pF 5% 50V 0603
2U08	2020 021 91642	470µF 20% 16V
2U09	5322 126 11578	1nF 10% 50V 0603
2U10	2020 021 91642	470µF 20% 16V
2U11	5322 126 11578	1nF 10% 50V 0603
2U12	5322 126 11583	10nF 10% 50V 0603
2U13	3198 017 44740	470nF 10V 0603
2U14	4822 126 13482	470nF 80-20% 16V
2U15	4822 124 12095	100µF 20% 16V
2U16	4822 126 13193	4.7nF 10% 63V
2U17	4822 126 13482	470nF 80-20% 16V
2U18	5322 122 33861	120pF10% 50V
2U19	2238 586 59812	100nF 20-80% 50V 0603
2U20	4822 126 14491	2.2µF -20+80% 10V 0805
2U21	4822 126 13482	470nF 80-20% 16V
2U22	4822 126 14491	2.2µF -20+80% 10V 0805
2U23	4822 124 12095	100µF 20% 16V
2U24	5322 126 11578	1nF 10% 50V 0603
2U25	2238 586 59812	100nF 20-80% 50V 0603
2U26	2238 586 59812	100nF 20-80% 50V 0603
2U27	5322 126 11582	6.8nF 10% 63V
2U28	5322 126 11582	6.8nF 10% 63V
2U30	5322 122 33861	120pF10% 50V
2U31	4822 124 12095	100µF 20% 16V
2U32	5322 126 11579	3.3nF 10% 63V
2U33	4822 126 14491	2.2µF -20+80% 10V 0805
2U34	2238 916 15641	22nF 10% 25V 0603
2U35	4822 126 14043	1µF 20% 16V
2V06	2238 586 59812	100nF 20-80% 50V 0603
2V07	2238 586 59812	100nF 20-80% 50V 0603
2V08	2238 586 59812	100nF 20-80% 50V 0603
2V09	2238 586 59812	100nF 20-80% 50V 0603
2V10	2238 586 59812	100nF 20-80% 50V 0603
2V11	2238 586 59812	100nF 20-80% 50V 0603
2V12	2238 586 59812	100nF 20-80% 50V 0603
2V13	2238 586 59812	100nF 20-80% 50V 0603
2Y00	2238 586 59812	100nF 20-80% 50V 0603
2Y01	2238 586 59812	100nF 20-80% 50V 0603
2Y02	2020 552 96448	1µF 10% 16V
2Y03	4822 126 14519	22pF 5% 50V 0402
2Y04	4822 126 14519	22pF 5% 50V 0402
2Y05	4822 126 14519	22pF 5% 50V 0402
2Y06	4822 126 14519	22pF 5% 50V 0402
2Y07	4822 126 14519	22pF 5% 50V 0402
2Y08	4822 126 14519	22pF 5% 50V 0402
2Y09	4822 126 14519	22pF 5% 50V 0402
2Y10	4822 126 14519	22pF 5% 50V 0402
2Y11	4822 126 14519	22pF 5% 50V 0402
2Y12	4822 126 14519	22pF 5% 50V 0402

3001	4822 051 30472	4.7kΩ 5% 0.062W
3002	4822 051 30472	4.7kΩ 5% 0.062W
3003	4822 117 13525	24kΩ 1% 0.62W 0603
3005	4822 051 30103	10kΩ 5% 0.062W
3006	4822 051 30471	470Ω 5% 0.062W
3007	3198 031 14710	4 x 470Ω 5% 1206
3008	4822 117 13523	220Ω 5% 0.63W
3009	4822 051 30008	Jumper 0603
3010	4822 051 30103	10kΩ 5% 0.062W
3011	4822 051 30103	10kΩ 5% 0.062W
3012	3198 031 11010	4 x 100Ω 5% 1206
3013	4822 051 30103	10kΩ 5% 0.062W
3014	4822 051 30682	6.8kΩ 5% 0.062W
3015	4822 051 30474	470kΩ 5% 0.062W
3016	5322 117 13034	1.5kΩ 1% 0.063W 0603
3017	4822 051 30472	4.7kΩ 5% 0.062W
3018	4822 051 30103	10kΩ 5% 0.062W
3019	4822 051 30472	4.7kΩ 5% 0.062W
3020	4822 051 30103	10kΩ 5% 0.062W
3021	4822 051 30103	10kΩ 5% 0.062W
3022	4822 117 11817	1.2kΩ 1% 0.062W
3023	4822 051 30222	2.2kΩ 5% 0.062W
3024	4822 051 30273	27kΩ 5% 0.062W
3025	4822 051 30221	220Ω 5% 0.062W
3026	4822 051 30472	4.7kΩ 5% 0.062W

3027	4822 117 12925	47kΩ 1% 0.063W 0603
3028	4822 051 30472	4.7kΩ 5% 0.062W
3029	3198 031 11010	4 x 100Ω 5% 1206
3030	4822 051 30472	4.7kΩ 5% 0.062W
3031	3198 031 11010	4 x 100Ω 5% 1206
3032	4822 051 30103	10kΩ 5% 0.062W
3033	4822 051 30103	10kΩ 5% 0.062W
3034	3198 031 11010	4 x 100Ω 5% 1206
3035	3198 031 11010	4 x 100Ω 5% 1206
3036	4822 051 30472	4.7kΩ 5% 0.062W
3039	4822 051 30181	180Ω 5% 0.062W
3046	3198 031 11010	4 x 100Ω 5% 1206
3047	4822 051 30008	Jumper 0603
3048	3198 031 11010	4 x 100Ω 5% 1206
3049	3198 031 11010	4 x 100Ω 5% 1206
3050	3198 031 11010	4 x 100Ω 5% 1206
3051	3198 031 11010	4 x 100Ω 5% 1206
3052	3198 031 11010	4 x 100Ω 5% 1206
3053	4822 051 30103	10kΩ 5% 0.062W
3054	3198 031 11010	4 x 100Ω 5% 1206
3055	3198 031 11010	4 x 100Ω 5% 1206
3056	3198 031 11010	4 x 100Ω 5% 1206
3057	3198 031 11010	4 x 100Ω 5% 1206
3059	2322 704 66201	620Ω 1% 0603
3061	3198 031 11010	4 x 100Ω 5% 1206
3062	4822 051 30103	10kΩ 5% 0.062W
3064	3198 031 11010	4 x 100Ω 5% 1206
3065	4822 051 30472	4.7kΩ 5% 0.062W
3066	4822 117 12925	47kΩ 1% 0.063W 0603
3067	4822 051 30474	470kΩ 5% 0.062W
3069	4822 051 30222	2.2kΩ 5% 0.062W
3072	3198 031 11010	4 x 100Ω 5% 1206
3073	3198 031 14710	4 x 470Ω 5% 1206
3074	3198 031 14710	4 x 470Ω 5% 1206
3076	3198 031 14710	4 x 470Ω 5% 1206
3077	4822 051 30103	10kΩ 5% 0.062W
3078	3198 031 14710	4 x 470Ω 5% 1206
3079	4822 051 30222	2.2kΩ 5% 0.062W
3080	4822 051 30472	4.7kΩ 5% 0.062W
3081	4822 051 30471	470Ω 5% 0.062W
3082	3198 031 11010	4 x 100Ω 5% 1206
3083	3198 031 11010	4 x 100Ω 5% 1206
3084	4822 051 30103	10kΩ 5% 0.062W
3085	3198 031 11010	4 x 100Ω 5% 1206
3086	3198 031 11010	4 x 100Ω 5% 1206
3087	4822 051 30101	100Ω 5% 0.062W
3088	4822 051 30222	2.2kΩ 5% 0.062W
3089	4822 051 30101	100Ω 5% 0.062W
3090	3198 031 14710	4 x 470Ω 5% 1206
3091	4822 051 30008	Jumper 0603
3092	4822 051 30222	2.2kΩ 5% 0.062W
3093	4822 051 30103	10kΩ 5% 0.062W
3097	4822 051 30471	470Ω 5% 0.062W
3099	3198 031 14710	4 x 470Ω 5% 1206
3100	4822 051 30221	220Ω 5% 0.062W
3101	4822 051 30221	220Ω 5% 0.062W
3102	3198 031 11010	4 x 100Ω 5% 1206
3301	4822 117 13632	100kΩ 1% 0.62W 0603
3303	4822 117 13632	100kΩ 1% 0.62W 0603
3304▲	2322 750 63908	3.9Ω 5% 1206 fusible
3308	4822 051 20474	470kΩ 5% 0.1W
3368	4822 051 30471	470Ω 5% 0.062W
3370	4822 051 30101	100Ω 5% 0.062W
3371	4822 051 30479	47Ω 5% 0.062W
3372	4822 051 30471	470Ω 5% 0.062W
3373	4822 051 30008	Jumper 0603
3374	4822 051 30008	Jumper 0603
3375	4822 051 30008	Jumper 0603
3376	4822 051 30101	100Ω 5% 0.062W
3377	4822 051 30101	100Ω 5% 0.062W
3378	4822 051 30153	15kΩ 5% 0.062W
3379	4822 051 30008	Jumper 0603
3380	4822 051 30101	100Ω 5% 0.062W
3381	4822 051 30008	Jumper 0603
3382	3198 031 05610	560Ω 5% 0.01W 0402
3385	4822 051 30471	470Ω 5% 0.062W
3393	4822 117 13632	100kΩ 1% 0.62W 0603
3400▲	4822 117 11152	4.7Ω 5% 0.062W
3402▲	2322 750 63908	3.9Ω 5% 1206 fusible
3403	4822 051 30101	100Ω 5% 0.062W
3404	4822 051 30561	560Ω 5% 0.062W
3405	4822 051 30102	1kΩ 5% 0.062W
3406	2322 702 60279	27Ω 5% 0.1W 0603
3408	4822 051 30101	100Ω 5% 0.062W
3411	3198 031 02720	2.7kΩ 5% 0.01W 0402
3412▲	4822 117 11152	4.7Ω 5% 0.062W
3414	4822 051 30472	4.7kΩ 5% 0.062W
3415	4822 051 30222	2.2kΩ 5% 0.062W
3418	4822 051 30391	390Ω 5% 0.062W
3419	2120 108 91909	39Ω 5% 0603
3435	4822 051 30472	4.7kΩ 5% 0.062W
3436	4822 051 30181	180Ω 5% 0.062W
3437	4822 051 30471	470Ω 5% 0.062W
3439	4822 051 30391	390Ω 5% 0.062W
3441	4822 051 30562	5.6kΩ 5% 0.063W 0603
3445	4822 051 30121	120Ω 5% 0.062W
3463	4822 051 30472	4.7kΩ 5% 0.062W
3468	4822 117 13632	100kΩ 1% 0.62W 0603
3473	4822 051 30102	1kΩ 5% 0.062W
3474	4822 051 30109	10Ω 5% 0.062W
3475▲	5322 117 11726	10Ω 5%
3476	4822 051 30561	560Ω 5% 0.062W
3700	4822 051 30472	4.7kΩ 5% 0.062W
3701	4822 051 30472	4.7kΩ 5% 0.062W
3702	4822 051 30472	4.7kΩ 5% 0.062W
3703	3198 031 01090	10Ω 5% 0.01W 0402
3704	3198 031 01090	10Ω 5% 0.01W 0402
3705	3198 031 01090	10Ω 5% 0.01W 0402
3706	3198 031 01090	10Ω 5% 0.01W 0402
3707	3198 031 01090	10Ω 5% 0.01W 0402
3708	3198 031 01090	10Ω 5% 0.01W 0402
3709	4822 051 30101	100Ω 5% 0.062W
3710	4822 051 30101	100Ω 5% 0.062W
3711	4822 117 12925	47kΩ 1% 0.063W 0603
3712	4822 117 12925	47kΩ 1% 0.063W 0603
3713	4822 051 30181	180Ω 5% 0.062W
3714	4822 051 30181	180Ω 5% 0.062W
3715	4822 051 30181	180Ω 5% 0.062W
3716	4822 117 13632	100kΩ 1% 0.62W 0603
3717	4822 117 13632	100kΩ 1% 0.62W 0603
3718	4822 117 13632	100kΩ 1% 0.62W 0603
3719	4822 051 30332	3.3kΩ 5% 0.062W
3720	4822 051 30103	10kΩ 5% 0.062W
3721	4822 117 13545	100Ω 1% 0402
3722	4822 051 30109	10Ω 5% 0.062W
3723	4822 051 30472	4.7kΩ 5% 0.062W
3725	4822 051 30332	3.3kΩ 5% 0.062W
3726	4822 117 11817	1.2kΩ 1% 0.062W
3727	4822 051 30151	150Ω 5% 0.062W
3728	4822 051 30151	150Ω 5% 0.062W
3729	4822 117 13545	100Ω 1% 0402
3730	3198 031 06810	680Ω 5% 0.01W 0402
3736	4822 051 30101	100Ω 5% 0.062W
3737	4822 051 30102	1kΩ 5% 0.062W
3738	4822 051 30102	1kΩ 5% 0.062W
3739	3198 031 01530	15kΩ 5% 0.01W 0402
3740	4822 051 30102	1kΩ 5% 0.062W
3741	4822 051 30223	22kΩ 5% 0.062W
3743	4822 051 30153	15kΩ 5% 0.062W
3744	4822 051 30222	2.2kΩ 5% 0.062W
3745	4822 051 30102	1kΩ 5% 0.062W
3746	5322 117 13042	3.9kΩ 1% 0.063W 0603
3747	4822 051 30154	150kΩ 5% 0.062W
3748	4822 117 12891	220kΩ 1% 0.063W 0603
3749	5322 117 13042	3.9kΩ 1% 0.063W 0603
3750	4822 051 30392	3.9kΩ 5% 0.063W 0603
3751	4822 051 30472	4.7kΩ 5% 0.062W
3752	4822 117 12917	1Ω 5% 0.062W 0603
3753	4822 117 12917	1Ω 5% 0.062W 0603
3754	4822 051 30101	100Ω 5% 0.062W
3755	4822 051 30472	4.7kΩ 5% 0.062W
3756	4822 117 12902	8.2kΩ 1% 0.063W 0603
3758	4822 051 30472	4.7kΩ 5% 0.062W
3759	4822 051 30221	220Ω 5% 0.062W
3762	4822 051 30101	100Ω 5% 0.062W
3764	4822 051 30109	10Ω 5% 0.062W
3770	4822 117 13545	100Ω 1% 0402
3771	4822 117 12971	15Ω 5% 0.62W 0603
3772	4822 117 12971	15Ω 5% 0.62W 0603
3773	4822 117 12925	47kΩ 1% 0.063W 0603
3774	4822 117 12925	47kΩ 1% 0.063W 0603
3781	4822 117 12925	47kΩ 1% 0.063W 0603
3782	4822 117 12925	47kΩ 1% 0.063W 0603
3783	4822 117 12925	47kΩ 1% 0.063W 0603
3792	4822 051 30102	1kΩ 5% 0.062W
3793	4822 051 30222	2.2kΩ 5% 0.062W
3794	4822 051 30109	10Ω 5% 0.062W
3795	4822 051 30109	10Ω 5% 0.062W
3796	4822 051 30101	100Ω 5% 0.062W
3797	4822 051 30101	100Ω 5% 0.062W
3798	4822 051 30472	4.7kΩ 5% 0.062W
3800	5322 117 13058	150Ω 1% 0.063W 0603
3802	5322 117 13058	150Ω 1% 0.063W 0603
3803	5322 117 13058	150Ω 1% 0.063W 0603
3804	4822 051 30102	1kΩ 5% 0.062W
3811	4822 051 30759	75Ω 5% 0.062W
3812	4822 051 30759	75Ω 5% 0.062W
3814	4822 051 30759	75Ω 5% 0.062W
3815	4822 051 30759	75Ω 5% 0.062W
3817	4822 051 30759	75Ω 5% 0.062W
3818	4822 051 30759	75Ω 5% 0.062W
3819	4822 051 30759	75Ω 5% 0.062W
3820	4822 051 30759	75Ω 5% 0.062W
3821	4822 051 30759	75Ω 5% 0.062W
3822	4822 051 30759	75Ω 5% 0.062W
3823	4822 051 30759	75Ω 5% 0.062W
3824	4822 051 30759	75Ω 5% 0.062W
3825	5322 117 13058	150Ω 1% 0.063W 0603
3826	5322 117 13058	150Ω 1% 0.063W 0603
3827	5322 117 13058	150Ω 1% 0.063W 0603
3828	4822 051 30339	33Ω 5% 0.062W
3829	4822 117 12971	15Ω 5% 0.62W 0603
3831	4822 117 13545	100Ω 1% 0402
3832	4822 117 13545	100Ω 1% 0402
3833	4822 117 13545	100Ω 1% 0402
3834	4822 117 13545	100Ω 1% 0402
3836	4822 117 13545	100Ω 1% 0402
3837	4822 117 13545	100Ω 1% 0402
3838	4822 117 13545	100Ω 1% 0402
3839	4822 117 13545	100Ω 1% 0402
3840	4822 117 13545	100Ω 1% 0402
3841	4822 117 13545	100Ω 1% 0402
3842	4822 117 13545	100Ω 1% 0402
3843	4822 117 13545	100Ω 1% 0402
3844	4822 117 13545	100Ω 1% 0402
3845	4822 117 13545	100Ω 1% 0402
3846	4822 051 30109	10Ω 5% 0.062W
3847	4822 051 30109	10Ω 5% 0.062W
3849	4822 051 30569	56Ω 5% 0.062W
3850	4822 117 13545	100Ω 1% 0402
3851	4822 117 13545	100Ω 1% 0402
3852	4822 117 13545	100Ω 1% 0402
3853	4822 117 13545	100Ω 1% 0402
3856	4822 051 30569	56Ω 5% 0.062W
3A00	4822 117 13601	22kΩ 5% 0402
3A01	4822 117 13606	10kΩ 5% 0.01W 0402
3A03▲	4822 117 13568	6.8Ω 5% 1206
3A06	4822 117 13545	100Ω 1% 0402
3A09	4822 117 13601	22kΩ 5% 0402
3A11	4822 117 11297	100kΩ 5% 0.1W
3A13	3198 031 04730	47Ω 5% 0402
3A14	3198 031 04730	47Ω 5% 0402
3A15	4822 117 11297	100kΩ 5% 0.1W
3A16	4822 117 13545	100Ω 1% 0402
3A17	4822 117 13545	100Ω 1% 0402
3A19	4822 117 13545	100Ω 1% 0402
3A20	4822 117 11297	100kΩ 5% 0.1W
3A22	4822 117 13632	100kΩ 1% 0.62W 0603
3A23	4822 117 13603	33kΩ 5% 0402
3A25	4822 051 30331	330Ω 5% 0.062W
3A26	4822 117 13603	33kΩ 5% 0402
3A27	3198 031 01530	15kΩ 5% 0.01W 0402
3A28	3198 031 01530	15kΩ 5% 0.01W 0402
3A29	4822 051 30331	330Ω 5% 0.062W
3A30	4822 117 12925	47kΩ 1% 0.063W 0603
3A32	4822 117 13545	100Ω 1% 0402
3A33	4822 117 13545	100Ω 1% 0402
3A34	4822 117 13545	100Ω 1% 0402
3A35	4822 051 30105	1MΩ 5% 0.062W
3A36	4822 117 13545	100Ω 1% 0402
3A37	4822 117 13545	100Ω 1% 0402
3A38	4822 051 30101	100Ω 5% 0.062W
3A39	4822 117 13545	100Ω 1% 0402
3A3A	4822 117 13545	100Ω 1% 0402
3A3B	4822 117 13545	100Ω 1% 0402
3A3E	4822 117 13545	100Ω 1% 0402
3A3F	4822 117 13545	100Ω 1% 0402
3A40	4822 117 13632	100kΩ 1% 0.62W 0603
3A42	3198 031 03320	3.3kΩ 5% 0402
3A43	4822 117 13545	100Ω 1% 0402
3A44	4822 117 13545	100Ω 1% 0402
3A45	3198 031 04730	47Ω 5% 0402
3A46	4822 117 11297	100kΩ 5% 0.1W
3A47	3198 031 04730	47Ω 5% 0402
3A48	4822 117 11297	100kΩ 5% 0.1W
3A49	3198 031 04730	47Ω 5% 0402
3A50	4822 117 13545	100Ω 1% 0402
3A51	3198 031 04730	47Ω 5% 0402
3A52	3198 031 03930	39kΩ 5% 0402
3A53	3198 031 03930	39kΩ 5% 0402
3A55	3198 031 04720	4.7kΩ 5% 0402
3A56	3198 031 04720	4.7kΩ 5% 0402
3A66	4822 117 11297	100kΩ 5% 0.1W
3C00	4822 051 30222	2.2kΩ 5% 0.062W
3C01	4822 051 30109	10Ω 5% 0.062W
3C03	4822 051 30103	10kΩ 5% 0.062W
3C04	4822 051 30103	10kΩ 5% 0.062W
3C05	4822 051 30471	470Ω 5% 0.062W
3C08	4822 051 30103	10kΩ 5% 0.062W
3C10	4822 051 30101	100Ω 5% 0.062W
3C11	4822 051 30101	100Ω 5% 0.062W
3D40	4822 117 10361	680Ω 1% 0.1W
3D41	4822 117 13606	10kΩ 5% 0.01W 0402
3D44	4822 117 13606	10kΩ 5% 0.01W 0402
3D45	4822 051 30101	100Ω 5% 0.062W
3D46	4822 051 30102	1kΩ 5% 0.062W
3D47	4822 051 30101	100Ω 5% 0.062W
3D48	4822 051 30102	1kΩ 5% 0.062W
3D49	4822 051 30759	75Ω 5% 0.062W
3D50	4822 051 30759	75Ω 5% 0.062W
3D51	2322 704 62002	2kΩ 1% 0603
3D52	5322 117 13018	1kΩ 1% 0.063W 0603

3D53	4822 117 13548	1kΩ 5% 0402
3D54	4822 117 13601	22kΩ 5% 0402
3D55	5322 117 13018	1kΩ 1% 0.063W 0603
3D56	2322 704 65102	5.1kΩ 1% 0603
3D57	5322 117 13047	330Ω 1% 0.063W 0603
3D58	4822 117 13548	1kΩ 5% 0402
3D60	5322 117 13036	1.2kΩ 1% 0.063W 0603
3D61	5322 117 13048	3.3kΩ 1% 0.063W 0603
3D62	4822 051 30103	10kΩ 5% 0.062W
3D63	5322 117 13037	2.2kΩ 0.063W 0603
3D64	4822 117 13548	1kΩ 5% 0402
3D65	4822 117 13548	1kΩ 5% 0402
3D66	4822 117 13601	22kΩ 5% 0402
3D67	5322 117 13036	1.2kΩ 1% 0.063W 0603
3D68	5322 117 13048	3.3kΩ 1% 0.063W 0603
3D69	4822 117 13548	1kΩ 5% 0402
3D70	5322 117 13048	3.3kΩ 1% 0.063W 0603
3D71	4822 117 13548	1kΩ 5% 0402
3D72	4822 117 13601	22kΩ 5% 0402
3D73	4822 117 11748	2.2Ω 5% 1206
3D79	5322 117 13037	2.2kΩ 0.063W 0603
3D80	4822 117 13545	100Ω 1% 0402
3D81	4822 117 10361	680Ω 1% 0.1W
3D82	4822 117 13545	100Ω 1% 0402
3D83	5322 117 13018	1kΩ 1% 0.063W 0603
3D84	4822 117 13545	100Ω 1% 0402
3D85	4822 051 30471	470Ω 5% 0.062W
3D86	4822 117 13545	100Ω 1% 0402
3D87	4822 117 13632	100kΩ 1% 0.62W 0603
3D88	5322 117 13036	1.2kΩ 1% 0.063W 0603
3D89	4822 051 30183	18kΩ 5% 0.062W
3D90	4822 117 12925	47kΩ 1% 0.063W 0603
3D92	4822 117 13606	10kΩ 5% 0.01W 0402
3D93	3198 031 04720	4.7kΩ 5% 0402
3D94	4822 117 13602	2.2kΩ 5% 0.01W 0402
3D95	3198 031 04720	4.7kΩ 5% 0402
3D96	4822 117 13602	2.2kΩ 5% 0.01W 0402
3D97	4822 117 13545	100Ω 1% 0402
3D98	4822 117 13545	100Ω 1% 0402
3D99	4822 051 30759	75Ω 5% 0.062W
3E04	4822 051 30109	10Ω 5% 0.062W
3E04	4822 051 30479	47Ω 5% 0.062W
3E05	3198 031 14710	4 x 470Ω 5% 1206
3E06	3198 031 14710	4 x 470Ω 5% 1206
3E07	2350 035 10152	4 x 1.5kΩ 5%
3E08▲	4822 117 11151	1Ω 5%
3E11	2350 035 10152	4 x 1.5kΩ 5%
3E12	2350 035 10152	4 x 1.5kΩ 5%
3E14	4822 117 13545	100Ω 1% 0402
3E16	3198 031 03320	3.3kΩ 5% 0402
3E18	4822 117 13602	2.2kΩ 5% 0.01W 0402
3E19	4822 117 13548	1kΩ 5% 0402
3E20	4822 117 13545	100Ω 1% 0402
3E21	4822 117 13548	1kΩ 5% 0402
3E22	2350 035 10152	4 x 1.5kΩ 5%
3E23	2350 035 10152	4 x 1.5kΩ 5%
3E24	2350 035 10152	4 x 1.5kΩ 5%
3E25	4822 117 13548	1kΩ 5% 0402
3E26	4822 117 13545	100Ω 1% 0402
3E27	4822 117 11297	100kΩ 5% 0.1W
3E28	3198 031 04720	4.7kΩ 5% 0402
3E29	4822 117 13597	330Ω 5% 0402 0.01W
3E30	4822 117 13545	100Ω 1% 0402
3E31	4822 117 13548	1kΩ 5% 0402
3E32	4822 117 13545	100Ω 1% 0402
3E33	4822 117 13545	100Ω 1% 0402
3E34	4822 117 13597	330Ω 5% 0402 0.01W
3E35	4822 117 13597	330Ω 5% 0402 0.01W
3E36	4822 117 13545	100Ω 1% 0402
3E37	4822 117 13548	1kΩ 5% 0402
3E38	4822 117 13545	100Ω 1% 0402
3E39	4822 117 13597	330Ω 5% 0402 0.01W
3E40	4822 117 13545	100Ω 1% 0402
3E41	3198 031 14710	4 x 470Ω 5% 1206
3E42	3198 031 14710	4 x 470Ω 5% 1206
3E43	3198 031 14710	4 x 470Ω 5% 1206
3E44	3198 031 14710	4 x 470Ω 5% 1206
3E45	4822 117 13597	330Ω 5% 0402 0.01W
3E50	4822 117 13606	10kΩ 5% 0.01W 0402
3E51	4822 117 13606	10kΩ 5% 0.01W 0402
3E52	4822 117 13606	10kΩ 5% 0.01W 0402
3E53	4822 117 13606	10kΩ 5% 0.01W 0402
3E55	4822 117 13606	10kΩ 5% 0.01W 0402
3E56	4822 117 13603	33kΩ 5% 0402
3E57	4822 117 11297	100kΩ 5% 0.1W
3E60	4822 117 13606	10kΩ 5% 0.01W 0402
3E62	4822 117 13548	1kΩ 5% 0402
3E63	4822 117 13606	10kΩ 5% 0.01W 0402
3E69	3198 031 04720	4.7kΩ 5% 0402
3E70	3198 031 04720	4.7kΩ 5% 0402
3E73	4822 117 13606	10kΩ 5% 0.01W 0402
3E74	4822 117 13546	47Ω 5% 0402
3E75	4822 117 13548	1kΩ 5% 0402
3E77	4822 117 13546	47Ω 5% 0402
3E78	4822 117 13546	47Ω 5% 0402
3E79	4822 117 13546	47Ω 5% 0402
3E80	4822 117 13546	47Ω 5% 0402
3E81	4822 117 13546	47Ω 5% 0402
3E82	4822 117 13546	47Ω 5% 0402
3E83	4822 117 13546	47Ω 5% 0402
3E84	4822 117 13546	47Ω 5% 0402
3E85	4822 117 13546	47Ω 5% 0402
3E86	4822 117 13546	47Ω 5% 0402
3E87	4822 117 13546	47Ω 5% 0402
3E88	4822 117 13546	47Ω 5% 0402
3E89	4822 117 13546	47Ω 5% 0402
3I08	4822 117 13548	1kΩ 5% 0402
3I34	4822 117 13601	22kΩ 5% 0402
3I35	4822 051 30101	100Ω 5% 0.062W
3I36	4822 117 13601	22kΩ 5% 0402
3I37	4822 051 30101	100Ω 5% 0.062W
3I38	3198 031 08220	8.2kΩ 5% 0.5W
3I39	3198 031 02720	2.7kΩ 5% 0.01W 0402
3I40	4822 051 30759	75Ω 5% 0.062W
3I41	4822 117 13545	100Ω 1% 0402
3I42	4822 117 13601	22kΩ 5% 0402
3I43	4822 051 30101	100Ω 5% 0.062W
3I44	4822 117 13601	22kΩ 5% 0402
3I45	4822 051 30101	100Ω 5% 0.062W
3I46	3198 031 08220	8.2kΩ 5% 0.5W
3I47	3198 031 02720	2.7kΩ 5% 0.01W 0402
3I48	4822 051 30759	75Ω 5% 0.062W
3I49	4822 117 13545	100Ω 1% 0402
3I50	4822 051 30151	150Ω 5% 0.062W
3I51	4822 051 30101	100Ω 5% 0.062W
3I52	4822 051 30151	150Ω 5% 0.062W
3I53	4822 051 30101	100Ω 5% 0.062W
3I54	4822 117 13545	100Ω 1% 0402
3I55	4822 051 30759	75Ω 5% 0.062W
3I56	4822 117 13545	100Ω 1% 0402
3I57	4822 051 30759	75Ω 5% 0.062W
3I58	4822 117 13545	100Ω 1% 0402
3I59	4822 051 30759	75Ω 5% 0.062W
3I60	4822 051 30759	75Ω 5% 0.062W
3I61	4822 051 30101	100Ω 5% 0.062W
3I62	4822 051 30101	100Ω 5% 0.062W
3I63	3198 031 03920	3.9kΩ 5% 0402
3I64	3198 031 08220	8.2kΩ 5% 0.5W
3I65	4822 051 30101	100Ω 5% 0.062W
3I66	4822 051 30759	75Ω 5% 0.062W
3I67	4822 051 30759	75Ω 5% 0.062W
3I68	4822 117 13545	100Ω 1% 0402
3I69	4822 051 30151	150Ω 5% 0.062W
3I70	4822 051 30101	100Ω 5% 0.062W
3I71	4822 051 30151	150Ω 5% 0.062W
3I72	4822 051 30101	100Ω 5% 0.062W
3I73	4822 117 13605	Jumper 0402
3I75	4822 117 13545	100Ω 1% 0402
3I76	4822 117 13545	100Ω 1% 0402
3I77	4822 051 30759	75Ω 5% 0.062W
3I78	4822 051 30759	75Ω 5% 0.062W
3I79	4822 051 30101	100Ω 5% 0.062W
3I80	4822 051 30101	100Ω 5% 0.062W
3I81	3198 031 08220	8.2kΩ 5% 0.5W
3I82	3198 031 03920	3.9kΩ 5% 0402
3I83	4822 117 13545	100Ω 1% 0402
3I84	4822 051 30759	75Ω 5% 0.062W
3I85	4822 117 13545	100Ω 1% 0402
3I86	4822 051 30759	75Ω 5% 0.062W
3I87	4822 117 13545	100Ω 1% 0402
3I88	4822 051 30759	75Ω 5% 0.062W
3I89	4822 051 30151	150Ω 5% 0.062W
3I90	4822 051 30101	100Ω 5% 0.062W
3I91	4822 051 30151	150Ω 5% 0.062W
3I92	4822 051 30101	100Ω 5% 0.062W
3I98	4822 117 11297	100kΩ 5% 0.1W
3IA1	4822 117 11297	100kΩ 5% 0.1W
3IA2	4822 051 30101	100Ω 5% 0.062W
3IA3	4822 117 13601	22kΩ 5% 0402
3IA4	4822 117 13548	1kΩ 5% 0402
3IA5	4822 117 13548	1kΩ 5% 0402
3IA6	4822 051 30102	1kΩ 5% 0.062W
3IA7	4822 051 30102	1kΩ 5% 0.062W
3IB1	4822 117 12925	47kΩ 1% 0.063W 0603
3IB2	4822 051 30101	100Ω 5% 0.062W
3IB4	4822 051 30223	22kΩ 5% 0.062W
3IB5	4822 051 30103	10kΩ 5% 0.062W
3IB9	4822 117 12925	47kΩ 1% 0.063W 0603
3IC1▲	4822 117 13574	1.5Ω 5% 1206
3IC2	4822 117 13601	22kΩ 5% 0402
3IC3	4822 117 13601	22kΩ 5% 0402
3IC4	4822 051 30101	100Ω 5% 0.062W
3IC6	4822 051 30101	100Ω 5% 0.062W
3ID0	3198 031 04720	4.7kΩ 5% 0402
3IE2	4822 051 30101	100Ω 5% 0.062W
3IE3	4822 051 30101	100Ω 5% 0.062W
3IE7	4822 051 30759	75Ω 5% 0.062W
3IE8	4822 051 30759	75Ω 5% 0.062W
3IE9	4822 117 13601	22kΩ 5% 0402
3IF0	4822 051 30759	75Ω 5% 0.062W
3IF5	4822 117 13601	22kΩ 5% 0402
3IF6	4822 051 30101	100Ω 5% 0.062W
3IF7	4822 051 30101	100Ω 5% 0.062W
3IH8	3198 031 04730	47Ω 5% 0402
3IH9	3198 031 04730	47Ω 5% 0402
3II0	4822 117 13606	10kΩ 5% 0.01W 0402
3II1	4822 117 13601	22kΩ 5% 0402
3II2	4822 117 13601	22kΩ 5% 0402
3II3	3198 031 04730	47Ω 5% 0402
3II4	3198 031 04730	47Ω 5% 0402
3IJ0	4822 117 13545	100Ω 1% 0402
3IJ1	4822 117 13545	100Ω 1% 0402
3IK2	4822 117 13601	22kΩ 5% 0402
3IK3	4822 117 13601	22kΩ 5% 0402
3IK7▲	4822 117 11152	4.7Ω 5% 0.062W
3IN4▲	2322 750 63908	3.9Ω 5% 1206 fusible
3IN5	4822 117 13601	22kΩ 5% 0402
3IN6	4822 117 13601	22kΩ 5% 0402
3IN7	4822 117 10361	680Ω 1% 0.1W
3IP0	4822 117 12902	8.2kΩ 1% 0.063W 0603
3IP1	4822 117 11817	1.2kΩ 1% 0.062W
3IP2	4822 051 30221	220Ω 5% 0.062W
3IP3	4822 051 30689	68Ω 5% 0.063W 0603
3IP4	4822 051 30221	220Ω 5% 0.062W
3IP5▲	4822 117 11748	2.2Ω 5% 1206
3IP6	4822 051 30102	1kΩ 5% 0.062W
3IP7	4822 051 30272	2.7kΩ 5% 0.062W
3IQ0	4822 051 30109	10Ω 5% 0.062W
3IQ1	4822 117 10361	680Ω 1% 0.1W
3IS2	4822 051 30101	100Ω 5% 0.062W
3IS3	4822 051 30101	100Ω 5% 0.062W
3IS4	4822 051 30101	100Ω 5% 0.062W
3IS5	4822 051 30101	100Ω 5% 0.062W
3IS6	4822 051 30101	100Ω 5% 0.062W
3IT0	4822 117 12925	47kΩ 1% 0.063W 0603
3IT1	4822 117 12925	47kΩ 1% 0.063W 0603
3L03	4822 117 13545	100Ω 1% 0402
3L04	4822 117 13545	100Ω 1% 0402
3L05	4822 117 13545	100Ω 1% 0402
3L06	4822 117 13545	100Ω 1% 0402
3L07	4822 117 13606	10kΩ 5% 0.01W 0402
3L08	3198 031 02720	2.7kΩ 5% 0.01W 0402
3L11	4822 117 13545	100Ω 1% 0402
3L12	4822 117 13543	470Ω 5% 0402
3L17	4822 051 30471	470Ω 5% 0.062W
3L22	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L23	4822 051 30471	470Ω 5% 0.062W
3L24	2350 033 91002	4 x jumper ARV341
3L25	2350 033 91002	4 x jumper ARV341
3L26	2350 033 91002	4 x jumper ARV341
3L27	2350 033 91002	4 x jumper ARV341
3L28	4822 117 13543	470Ω 5% 0402
3L29	2350 033 91002	4 x jumper ARV341
3L30	2350 033 91002	4 x jumper ARV341
3L31	4822 051 20471	470Ω 5% 0.1W
3L32	4822 051 20471	470Ω 5% 0.1W
3P65	4822 117 13545	100Ω 1% 0402
3P66	4822 117 13545	100Ω 1% 0402
3P67	3198 031 04720	4.7kΩ 5% 0402
3P69	3198 031 04720	4.7kΩ 5% 0402
3S01	4822 051 30008	Jumper 0603
3S04	3198 031 03320	3.3kΩ 5% 0402
3S05	3198 031 05620	5.6 kΩ 5% 0.01W 0402
3S06	4822 117 12925	47kΩ 1% 0.063W 0603
3S07	4822 117 12925	47kΩ 1% 0.063W 0603
3S08	4822 051 30221	220Ω 5% 0.062W
3S11	4822 117 13606	10kΩ 5% 0.01W 0402
3S12	3198 031 01830	18kΩ 5% 0.01W 0402
3S12	3198 031 04730	47Ω 5% 0402
3S13	4822 117 13606	10kΩ 5% 0.01W 0402
3S14	4822 117 13606	10kΩ 5% 0.01W 0402
3S15	4822 117 13545	100Ω 1% 0402
3S16	4822 117 13545	100Ω 1% 0402
3S18	4822 117 13545	100Ω 1% 0402
3S19	4822 117 13545	100Ω 1% 0402
3S20	4822 117 13606	10kΩ 5% 0.01W 0402
3U01	4822 051 30102	1kΩ 5% 0.062W
3U02	4822 051 30102	1kΩ 5% 0.062W
3U03	4822 051 30333	33kΩ 5% 0.062W
3U04	4822 051 20121	120Ω 5% 0.1W
3U05	4822 051 30102	1kΩ 5% 0.062W
3U06	4822 051 30471	470Ω 5% 0.062W
3U07	4822 117 12139	22Ω 5% 0.062W
3U08	5322 117 13034	1.5kΩ 1% 0.063W 0603
3U09	4822 051 30562	5.6kΩ 5% 0.063W 0603
3U10	4822 051 30109	10Ω 5% 0.062W
3U11	4822 051 30121	120Ω 5% 0.062W
3U12	4822 051 30223	22kΩ 5% 0.062W
3U13	4822 051 30103	10kΩ 5% 0.062W
3U14	4822 051 30102	1kΩ 5% 0.062W
3U15	5322 117 13042	3.9kΩ 1% 0.063W 0603
3U16	4822 051 30479	47Ω 5% 0.062W

3U17	4822 117 13608	4.7Ω 5% 0603 0.62W
3U18	5322 117 13018	1kΩ 1% 0.063W 0603
3U19	4822 051 30472	4.7kΩ 5% 0.062W
3U20	5322 117 13018	1kΩ 1% 0.063W 0603
3U21	4822 117 12925	47kΩ 1% 0.063W 0603
3U22	4822 051 30271	270Ω 5% 0.062W
3U23	4822 051 30121	120Ω 5% 0.062W
3U24	4822 051 30223	22kΩ 5% 0.062W
3U25	4822 117 12891	220kΩ 1% 0.063W 0603
3U26	4822 051 30223	22kΩ 5% 0.062W
3U27	4822 051 30223	22kΩ 5% 0.062W
3U28	4822 117 12925	47kΩ 1% 0.063W 0603
3U29	4822 051 30109	10Ω 5% 0.062W
3U30	4822 051 20121	120Ω 5% 0.1W
3U31	4822 051 20121	120Ω 5% 0.1W
3U32	4822 051 30183	18kΩ 5% 0.062W
3U33	4822 051 30103	10kΩ 5% 0.062W
3U34	4822 051 30334	330kΩ 5% 0.062W
3U35	4822 051 30103	10kΩ 5% 0.062W
3U36	4822 051 30222	2.2kΩ 5% 0.062W
3U37	4822 051 30223	22kΩ 5% 0.062W
3U38	4822 051 30222	2.2kΩ 5% 0.062W
3U39	4822 051 30223	22kΩ 5% 0.062W
3U40	4822 051 30154	150kΩ 5% 0.062W
3U41	4822 051 30102	1kΩ 5% 0.062W
3U42	4822 051 30103	10kΩ 5% 0.062W
3U43	4822 051 30223	22kΩ 5% 0.062W
3U44	4822 051 30105	1MΩ 5% 0.062W
3U45	4822 051 30105	1MΩ 5% 0.062W
3U46	5322 117 13029	47kΩ 1% 0.063W 0603
3U51	4822 051 30339	33Ω 5% 0.062W
3U52	4822 051 30102	1kΩ 5% 0.062W
3U53	4822 051 30183	18kΩ 5% 0.062W
3U54	4822 051 30101	100Ω 5% 0.062W
3U55	4822 051 30102	1kΩ 5% 0.062W
3V03	4822 117 13546	47Ω 5% 0402
3V04	4822 117 13546	47Ω 5% 0402
3V05	4822 117 13546	47Ω 5% 0402
3V06	4822 117 13545	100Ω 1% 0402
3V07	3198 031 04720	4.7kΩ 5% 0402
3V08	4822 117 13548	1kΩ 5% 0402
3V09	4822 117 13545	100Ω 1% 0402
3V10	4822 117 13545	100Ω 1% 0402
3V11	4822 117 13545	100Ω 1% 0402
3V12	4822 117 13545	100Ω 1% 0402
3V14	4822 117 13546	47Ω 5% 0402
3V15	4822 117 13546	47Ω 5% 0402
3V16	4822 117 13546	47Ω 5% 0402
3V17	3198 031 04720	4.7kΩ 5% 0402
3Y00	3198 031 01530	15kΩ 5% 0.01W 0402
3Y01	3198 031 03320	3.3kΩ 5% 0402
3Y02	4822 117 13606	10kΩ 5% 0.01W 0402
3Y03	4822 117 11151	1Ω 5%
3Y04	4822 117 11151	1Ω 5%
3Y05	4822 117 13606	10kΩ 5% 0.01W 0402
3Y06	4822 117 13545	100Ω 1% 0402
3Y07	4822 117 13546	47Ω 5% 0402
9001	4822 051 30008	Jumper 0603
9002	4822 051 30008	Jumper 0603
9010	4822 051 30008	Jumper 0603
9011	4822 051 30008	Jumper 0603
9012	4822 051 30008	Jumper 0603
9013	4822 051 30008	Jumper 0603
9016	4822 051 30008	Jumper 0603
9019	4822 051 30008	Jumper 0603
9020	4822 051 30008	Jumper 0603
9318	4822 051 30008	Jumper 0603
9322	4822 051 30008	Jumper 0603
9406	4822 051 30008	Jumper 0603
9410	4822 051 30008	Jumper 0603
9413	4822 051 30008	Jumper 0603
9416	4822 051 30008	Jumper 0603
9417	4822 051 30008	Jumper 0603
9418	4822 051 30008	Jumper 0603
9419	4822 051 30008	Jumper 0603
9420	4822 051 30008	Jumper 0603
9702	4822 051 30008	Jumper 0603
9703	4822 051 30008	Jumper 0603
9708	4822 051 30008	Jumper 0603
9712	4822 051 30008	Jumper 0603
9714	4822 051 30008	Jumper 0603
9716	4822 051 30008	Jumper 0603
9717	4822 051 30008	Jumper 0603
9721	4822 051 30008	Jumper 0603
9723	4822 051 30008	Jumper 0603
9725	4822 051 30008	Jumper 0603
9727	4822 051 30008	Jumper 0603
9728	4822 051 30008	Jumper 0603
9729	4822 051 30008	Jumper 0603
9744	4822 051 30008	Jumper 0603
9747	4822 051 30008	Jumper 0603
9760	4822 051 30008	Jumper 0603
9761	4822 051 30008	Jumper 0603
9762	4822 051 30008	Jumper 0603

9763	4822 051 30008	Jumper 0603
9764	4822 051 30008	Jumper 0603
9765	4822 051 30008	Jumper 0603
9766	4822 051 30008	Jumper 0603
9772	4822 051 30008	Jumper 0603
9A00	4822 117 13605	Jumper 0402
9A01	4822 117 13605	Jumper 0402
9A04	4822 117 13605	Jumper 0402
9A05	4822 117 13605	Jumper 0402
9A06	4822 117 13605	Jumper 0402
9A09	4822 051 20008	Jumper 0805
9C02	4822 051 30008	Jumper 0603
9D55	4822 051 30008	Jumper 0603
9E54	4822 117 13605	Jumper 0402
9I00	4822 117 13605	Jumper 0402
9I02	4822 117 13605	Jumper 0402
9I05	4822 051 30008	Jumper 0603
9I06	4822 051 30008	Jumper 0603
9I13	4822 051 30008	Jumper 0603
9I32	4822 117 13605	Jumper 0402
9I33	4822 117 13605	Jumper 0402
9I34	4822 117 13605	Jumper 0402
9I35	4822 117 13605	Jumper 0402
9I36	4822 117 13605	Jumper 0402
9I37	4822 117 13605	Jumper 0402
9I39	4822 117 13605	Jumper 0402
9I41	4822 117 13605	Jumper 0402
9I48	4822 117 13605	Jumper 0402
9I49	4822 117 13605	Jumper 0402
9I77	4822 117 13605	Jumper 0402
9I79	4822 117 13605	Jumper 0402
9I81	4822 117 13605	Jumper 0402
9I82	4822 117 13605	Jumper 0402
9I89	4822 117 13605	Jumper 0402
9IB0	4822 117 13605	Jumper 0402
9IC1	4822 117 13605	Jumper 0402
9IC2	4822 117 13605	Jumper 0402
9IC3	4822 117 13605	Jumper 0402
9L04	4822 051 30008	Jumper 0603
9L05	4822 051 30008	Jumper 0603
9P69	4822 117 13605	Jumper 0402
9P70	4822 117 13605	Jumper 0402
9P71	4822 117 13605	Jumper 0402
9S01	4822 051 30008	Jumper 0603
9S02	4822 051 30008	Jumper 0603
9S03	4822 051 30008	Jumper 0603
9S04	4822 051 30008	Jumper 0603
9S05	4822 051 30008	Jumper 0603
9S06	4822 051 30008	Jumper 0603
9S07	4822 051 30008	Jumper 0603
9S08	4822 051 30008	Jumper 0603
9S09	4822 051 30008	Jumper 0603
9S11	4822 051 30008	Jumper 0603
9S12	4822 051 30008	Jumper 0603
9S13	4822 051 30008	Jumper 0603
9S14	4822 051 30008	Jumper 0603
9S15	4822 051 30008	Jumper 0603
9S16	4822 051 30008	Jumper 0603
9S17	4822 051 30008	Jumper 0603
9S18	4822 051 30008	Jumper 0603
9S19	4822 051 30008	Jumper 0603
9S20	4822 051 30008	Jumper 0603
9S21	4822 051 30008	Jumper 0603
9S22	4822 051 30008	Jumper 0603
9S23	4822 051 30008	Jumper 0603
9S24	5322 117 13049	470Ω 1% 0.063W 0603
9S25	4822 051 30008	Jumper 0603
9S26	4822 051 30008	Jumper 0603
9S27	4822 051 30008	Jumper 0603
9S28	4822 051 30008	Jumper 0603
9S29	4822 051 30008	Jumper 0603
9S30	4822 051 30008	Jumper 0603
9S31	4822 051 30008	Jumper 0603
9S32	4822 051 30008	Jumper 0603
9S33	4822 051 30008	Jumper 0603
9S34	4822 051 30008	Jumper 0603
9S35	4822 051 30008	Jumper 0603
9S36	4822 051 30008	Jumper 0603
9S37	4822 051 30008	Jumper 0603
9S38	4822 051 30008	Jumper 0603
9S65	4822 051 30008	Jumper 0603
9T01	4822 051 30223	22kΩ 5% 0.062W
9T04	4822 051 30008	Jumper 0603
9T07	4822 051 30008	Jumper 0603
9T08	4822 051 30008	Jumper 0603
9T11	4822 051 30008	Jumper 0603
9T12	4822 051 30008	Jumper 0603
9T13	4822 051 30008	Jumper 0603
9T14	4822 051 20008	Jumper 0805
9T15	4822 051 30008	Jumper 0603

5401	3198 018 56880	6.8µH 10% 0603
5403	2422 549 44461	Trimmer 40MHz 5CCE
5404	2422 535 95427	Bead 120Ω at 100MHz
5405	2422 535 95427	Bead 120Ω at 100MHz
5406	3198 018 52280	2.2µH 10% 0603
5408	2422 549 44983	Trimmer 78MHz 5CCB
5411	3198 018 32770	0.27µH 10% 0805
5415	4822 157 11716	Bead 30Ω at 100MHz
5416	4822 157 11716	Bead 30Ω at 100MHz
5700	4822 157 11716	Bead 30Ω at 100MHz
5701	4822 157 11716	Bead 30Ω at 100MHz
5702	4822 157 11716	Bead 30Ω at 100MHz
5703	4822 157 71206	Bead 600Ω at 100MHz
5706	4822 157 11716	Bead 30Ω at 100MHz
5707	4822 157 11716	Bead 30Ω at 100MHz
5710	4822 157 11716	Bead 30Ω at 100MHz
5711	4822 157 11716	Bead 30Ω at 100MHz
5712	4822 156 21729	Bead 1kΩ at 100MHz
5713	4822 157 11716	Bead 30Ω at 100MHz
5714	4822 157 71206	Bead 600Ω at 100MHz
5715	4822 157 11716	Bead 30Ω at 100MHz
5716	4822 156 21729	Bead 1kΩ at 100MHz
5717	4822 156 21729	Bead 1kΩ at 100MHz
5718	4822 157 11716	Bead 30Ω at 100MHz
5719	4822 156 21729	Bead 1kΩ at 100MHz
5720	4822 157 11876	6.8µH 10% 0805
5721	4822 157 11716	Bead 30Ω at 100MHz
5722	4822 157 11716	Bead 30Ω at 100MHz
5724	4822 156 21729	Bead 1kΩ at 100MHz
5725	4822 157 11716	Bead 30Ω at 100MHz
5726	4822 156 21729	Bead 1kΩ at 100MHz
5727	4822 156 21729	Bead 1kΩ at 100MHz
5728	4822 157 11716	Bead 30Ω at 100MHz
5729	4822 157 11716	Bead 30Ω at 100MHz
5731	4822 156 21729	Bead 1kΩ at 100MHz
5736	4822 157 11876	6.8µH 10% 0805
5737	4822 156 21729	Bead 1kΩ at 100MHz
5742	4822 157 11716	Bead 30Ω at 100MHz
5743	4822 157 11716	Bead 30Ω at 100MHz
5744	4822 157 11716	Bead 30Ω at 100MHz
5746	4822 157 11716	Bead 30Ω at 100MHz
5747	4822 157 11716	Bead 30Ω at 100MHz
5748	4822 157 11716	Bead 30Ω at 100MHz
5750	4822 157 11716	Bead 30Ω at 100MHz
5751	4822 157 11716	Bead 30Ω at 100MHz
5752	4822 157 11716	Bead 30Ω at 100MHz
5753	4822 157 11716	Bead 30Ω at 100MHz
5754	4822 157 11716	Bead 30Ω at 100MHz
5755	4822 157 11716	Bead 30Ω at 100MHz
5756	4822 157 11716	Bead 30Ω at 100MHz
5757	4822 157 11716	Bead 30Ω at 100MHz
5A00	4822 157 11716	Bead 30Ω at 100MHz
5A01	4822 157 11716	Bead 30Ω at 100MHz
5A03	4822 157 11716	Bead 30Ω at 100MHz
5A06	4822 157 11716	Bead 30Ω at 100MHz
5A17	2422 549 43769	Bead 30Ω at 100MHz
5A18	2422 549 43769	Bead 30Ω at 100MHz
5A19	4822 157 11828	22µH 20% 0805
5A20	2322 734 63309	33Ω 1% 0.1W 0805
5A21	2322 734 63309	33Ω 1% 0.1W 0805
5D51	4822 157 11716	Bead 30Ω at 100MHz
5D52	4822 157 11716	Bead 30Ω at 100MHz
5D54	4822 157 11716	Bead 30Ω at 100MHz
5D56	4822 156 21729	Bead 1kΩ at 100MHz
5E00	2422 549 42896	Bead 120Ω at 100MHz
5E01	2422 549 42896	Bead 120Ω at 100MHz
5E02	2422 549 42896	Bead 120Ω at 100MHz
5E03	2422 549 42896	Bead 120Ω at 100MHz
5E04	2422 549 42896	Bead 120Ω at 100MHz
5E05	2422 549 42896	Bead 120Ω at 100MHz
5E08	4822 157 11716	Bead 30Ω at 100MHz
5E50	2422 549 43062	Bead 600Ω at 100MHz
5E51	2422 549 43062	Bead 600Ω at 100MHz
5E53	2422 535 94134	10µH 20% 0805
5E56	2422 549 43062	Bead 600Ω at 100MHz
5E57	2422 549 43062	Bead 600Ω at 100MHz
5E58	2422 549 43062	Bead 600Ω at 100MHz
5L02	3198 018 51080	1µH 10% 0603
5L04	3198 018 54770	0.47µF 10% 0603
5L06	3198 018 51080	1µH 10% 0603
5L07	4822 157 11716	Bead 30Ω at 100MHz
5L08	4822 157 11716	Bead 30Ω at 100MHz
5L09	4822 157 11716	Bead 30Ω at 100MHz
5L10	4822 157 11716	Bead 30Ω at 100MHz
5L11	4822 157 11716	Bead 30Ω at 100MHz
5L12	4822 157 11716	Bead 30Ω at 100MHz
5L13	4822 156 21729	Bead 1kΩ at 100MHz
5L14	4822 156 21729	Bead 1kΩ at 100MHz
5L15	4822 156 21729	Bead 1kΩ at 100MHz
5L16	4822 117 10353	150Ω 1% 0.1W

5L17	4822 117 10353	150Ω 1% 0.1W
5L18	4822 117 10353	150Ω 1% 0.1W
5L21	4822 156 21729	Bead 1kΩ at 100MHz
5P51	4822 157 11716	Bead 30Ω at 100MHz
5S01	4822 157 11716	Bead 30Ω at 100MHz
5S02	4822 157 11716	Bead 30Ω at 100MHz
5S03	4822 157 11716	Bead 30Ω at 100MHz
5S04	4822 157 11716	Bead 30Ω at 100MHz
5S05	4822 157 11716	Bead 30Ω at 100MHz
5S06	4822 051 30008	Jumper 0603
5S07	4822 051 30008	Jumper 0603
5S08	4822 051 30008	Jumper 0603
5T02	2422 535 94134	10μH 20% 0805
5U01	3104 308 20661	Transformer BD13118-02
5U02	2422 535 94134	10μH 20% 0805
5U03	4822 157 11716	Bead 30Ω at 100MHz
5U04	4822 157 11716	Bead 30Ω at 100MHz
5U05	2422 535 94134	10μH 20% 0805
5U06	2422 535 94134	10μH 20% 0805
5V06	3198 018 90050	Bead 1kΩ at 100MHz
5V07	3198 018 90050	Bead 1kΩ at 100MHz
5V08	3198 018 90050	Bead 1kΩ at 100MHz
5Y01	2422 549 45325	Bead 67Ω at 100MHz.
5Y02	2422 549 45325	Bead 67Ω at 100MHz.
5Y03	2422 549 45325	Bead 67Ω at 100MHz.
5Y04	2422 549 45325	Bead 67Ω at 100MHz.
5Y05	2422 549 45325	Bead 67Ω at 100MHz.

6001	4822 130 80622	BAT54
6002	4822 130 11397	BAS316
6003	4822 130 80622	BAT54
6004	4822 130 80622	BAT54
6005	4822 130 11422	PLVA2650A
6403	9340 552 30115	BA591
6830	4822 130 11397	BAS316
6831	4822 130 11397	BAS316
6832	4822 130 11397	BAS316
6833	4822 130 11397	BAS316
6834	4822 130 11397	BAS316
6835	4822 130 11397	BAS316
6836	4822 130 11397	BAS316
6837	4822 130 11397	BAS316
6838	4822 130 11397	BAS316
6839	4822 130 11397	BAS316
6840	4822 130 11397	BAS316
6841	4822 130 11397	BAS316
6842	4822 130 11397	BAS316
6843	4822 130 11397	BAS316
6844	4822 130 11397	BAS316
6845	4822 130 11397	BAS316
6846	4822 130 11397	BAS316
6847	4822 130 11397	BAS316
6A00	4822 130 11551	UDZS10B
6A01	4822 130 10838	UDZ3.3B
6A02	4822 130 11397	BAS316
6D53	9340 553 52115	BAS321
6D54	9340 553 52115	BAS321
6D55	9340 553 52115	BAS321
6D56	9340 553 52115	BAS321
6D57	4822 130 11423	PLVA2656A
6D58	4822 130 11423	PLVA2656A
6D59	4822 130 11423	PLVA2656A
6D60	4822 130 11423	PLVA2656A
6D61	4822 130 11423	PLVA2656A
6D62	4822 130 11564	UDZ3.9B
6D63	4822 130 11397	BAS316
6D64	4822 130 11397	BAS316
6E54	4822 130 11397	BAS316
6E55	4822 130 11397	BAS316
6I10	4822 130 11416	PDZ6.8B
6I11	4822 130 11416	PDZ6.8B
6I12	4822 130 11416	PDZ6.8B
6I13	4822 130 11416	PDZ6.8B
6I14	9340 548 61115	PDZ12B
6I15	4822 130 11416	PDZ6.8B
6I16	4822 130 11416	PDZ6.8B
6I17	4822 130 11416	PDZ6.8B
6I18	4822 130 11416	PDZ6.8B
6I19	4822 130 11416	PDZ6.8B
6I20	9340 548 61115	PDZ12B
6I21	4822 130 11416	PDZ6.8B
6I22	4822 130 11416	PDZ6.8B
6I23	4822 130 11416	PDZ6.8B
6I24	4822 130 11416	PDZ6.8B
6I25	4822 130 11416	PDZ6.8B
6I26	4822 130 11416	PDZ6.8B
6I27	4822 130 11416	PDZ6.8B
6I28	4822 130 11416	PDZ6.8B
6I29	4822 130 11416	PDZ6.8B
6I30	4822 130 11416	PDZ6.8B
6I31	4822 130 11416	PDZ6.8B
6I32	4822 130 11416	PDZ6.8B
6I33	4822 130 11416	PDZ6.8B
6I34	4822 130 11416	PDZ6.8B
6I35	4822 130 11416	PDZ6.8B
6I36	4822 130 11416	PDZ6.8B
6I37	4822 130 11416	PDZ6.8B
6I38	4822 130 11416	PDZ6.8B
6I39	4822 130 11416	PDZ6.8B
6I40	4822 130 11416	PDZ6.8B
6I41	4822 130 11416	PDZ6.8B
6I42	4822 130 11416	PDZ6.8B
6I43	4822 130 11416	PDZ6.8B
6I44	4822 130 11416	PDZ6.8B
6I45	4822 130 11416	PDZ6.8B
6I46	4822 130 11416	PDZ6.8B
6I47	4822 130 11416	PDZ6.8B
6I48	4822 130 11416	PDZ6.8B
6I49	9340 548 61115	PDZ12B
6I50	4822 130 11416	PDZ6.8B
6I51	4822 130 11416	PDZ6.8B
6I52	4822 130 11416	PDZ6.8B
6I53	4822 130 11416	PDZ6.8B
6I54	4822 130 11416	PDZ6.8B
6I55	4822 130 11416	PDZ6.8B
6I56	4822 130 11416	PDZ6.8B
6I69	4822 130 11416	PDZ6.8B
6I70	4822 130 11416	PDZ6.8B
6I90	4822 130 11416	PDZ6.8B
6I91	4822 130 11416	PDZ6.8B
6I92	4822 130 11416	PDZ6.8B
6I93	4822 130 11416	PDZ6.8B
6I94	4822 130 11416	PDZ6.8B
6I95	4822 130 11416	PDZ6.8B
6I96	4822 130 11416	PDZ6.8B
6I97	4822 130 11416	PDZ6.8B
6I98	4822 130 11416	PDZ6.8B
6I99	4822 130 11416	PDZ6.8B
6IA0	9340 548 61115	PDZ12B
6IA6	4822 130 11397	BAS316
6IA7	4822 130 11397	BAS316
6T01	4822 130 11397	BAS316
6T03	4822 130 11397	BAS316
6T08	9340 548 71115	PDZ33B
6U01	4822 130 11397	BAS316
6U03	4822 130 11397	BAS316
6U04	4822 130 11397	BAS316
6U05	9340 548 61115	PDZ12B
6U06	9322 184 73668	1SMA5915B
6U07	4822 130 11416	PDZ6.8B
6U08	4822 130 80622	BAT54
6U09	4822 130 80622	BAT54
6U10	4822 130 11522	UDZ15B
6U11	4822 130 11397	BAS316
6U12	9340 548 52115	PDZ5.1B
6U13	9340 548 58115	PDZ9.1B
6U14	4822 130 11397	BAS316
6U15	4822 130 11397	BAS316
6V01	4822 130 11397	BAS316
6V02	4822 130 11397	BAS316
6V03	4822 130 11397	BAS316
6Y00	9340 548 61115	PDZ12B

7001	9352 684 81557	SAA5801H/015
7002	3198 010 42320	BC857BW
7003	3198 010 42310	BC847BW
7004	3198 010 42310	BC847BW
7005	9322 172 45668	LF33ABDT
7007	9322 157 20668	MSM51V18165F-60J
7008	3198 010 42310	BC847BW
7009	3198 010 42310	BC847BW
7010	3198 010 42320	BC857BW
7011	9322 156 81668	M24C32-WMN6TNKSA
7012	9322 156 72668	M29W400BT-90N1
7013	3198 010 42310	BC847BW
7014	3198 010 42320	BC857BW
7017	4822 130 10255	MUN2213
7018	9352 115 40118	74LVC245APW
7019	9352 115 40118	74LVC245APW
7020	3198 010 42310	BC847BW
7066	3104 317 45061	Software (check Prod.Surv.)
7067	3104 317 04831	Software (Check prod.Surv.)
7307	9352 630 99118	TDA9181T
7320	3198 010 42310	BC847BW
7322	3198 010 42310	BC847BW
7323	9352 625 24518	TDA9321H/N2
7402	3198 010 42310	BC847BW
7403	5322 130 60159	BC846B
7407	4822 130 60373	BC856B
7410	3198 010 42310	BC847BW
7411	5322 130 60159	BC846B
7414	3198 010 42310	BC847BW
7415	3198 010 42310	BC847BW
7706	9322 142 88668	LF25CDT
7707	5322 130 60159	BC846B
7708	5322 130 60159	BC846B
7709	5322 130 60159	BC846B
7710	5322 130 60159	BC846B
7711	2422 486 80938	Socket 32p f
7712	9351 870 00118	74HC573PW
7713	9352 688 09557	SAA4978H/V204
7714	9965 000 02179	MS81V04160-25TB
7715	4822 209 73852	PMBT2369
7717	9322 183 81668	MSM54V12222B-25JS
7718	9352 695 58557	SAA4993H/V1
7719	9322 183 81668	MSM54V12222B-25JS
7722	9965 000 02179	MS81V04160-25TB
7723	9965 000 02179	MS81V04160-25TB
7724	9322 188 08702	T8F24EF-0002 EAGLE
7725	4822 209 73852	PMBT2369
7727	9322 170 14668	LF15ABDT
7740	9352 687 20125	74LVC1G125GW
7741	9352 687 20125	74LVC1G125GW
7742	9352 115 40118	74LVC245APW
7743	9352 115 40118	74LVC245APW
7744	9352 115 40118	74LVC245APW
7745	9352 115 40118	74LVC245APW
7746	9322 190 24668	CY2302SC-1
7747	9352 687 21165	74LVC1G126GW
7748	9352 687 20125	74LVC1G125GW
7999	3104 317 45141	Software FBX(check Prod.Surv.)
7999	3104 317 45331	Software FBX (Check Prod Serv)
7A00	4822 209 30095	LM833D
7A01	3198 010 42310	BC847BW
7A02	9322 196 03702	MSP3411G-QI-B8V3
7A03	4822 209 30095	LM833D
7A07	9322 183 05668	TS482ID
7A08	4822 130 60373	BC856B
7A09	4822 130 60373	BC856B
7A10	9340 425 20115	BC847BS
7D51	4822 209 12776	TDA8601T/C1
7D52	4822 130 62755	BF570
7D53	4822 130 62755	BF570
7D54	4822 130 62755	BF570
7D55	4822 130 62755	BF570
7D57	9322 131 22668	TSH95D
7E02	9322 196 51668	EPCS1SI8
7E05	9322 170 14668	LF15ABDT
7E08	3198 010 42320	BC857BW
7E09	9322 195 65668	AD9066JR
7E10	9352 686 35118	PCA9515DP
7E12	9340 425 20115	BC847BS
7E13	3198 010 42320	BC857BW
7E14	3198 010 42310	BC847BW
7E16	9322 195 65668	AD9066JR
7E17	3198 010 42320	BC857BW
7E18	9322 146 75685	TS431L
7E19	3198 010 42310	BC847BW
7E20	3198 010 42320	BC857BW
7E21	3198 010 42310	BC847BW
7E22	3198 010 42310	BC847BW
7E23	3198 010 42320	BC857BW
7E24	9322 146 75685	TS431L
7I01	9340 425 20115	BC847BS
7I02	9340 425 20115	BC847BS
7I05	3198 010 42320	BC857BW
7I07	4822 130 60142	BC869
7I09	3198 010 42310	BC847BW
7I17	9322 116 87668	TEA6422D
7I20	9351 869 40118	74HC4053PW
7I22	9340 425 20115	BC847BS
7I32	9351 869 40118	74HC4053PW
7I35	3198 010 42310	BC847BW
7I36	3198 010 42310	BC847BW
7I37	3198 010 42320	BC857BW
7I38	3198 010 42320	BC857BW
7I44	9340 425 20115	BC847BS
7L01	9322 181 72671	AD9883AKST-110
7L02	4822 209 17398	LD1117DT33
7L03	4822 209 73852	PMBT2369
7P56	4822 209 17345	M62320FP
7S01	4822 130 10255	MUN2213
7S01	5322 130 60159	BC846B
7S02	4822 130 10255	MUN2213
7S02	5322 130 60159	BC846B
7S03	9340 425 20115	BC847BS
7S04	4822 130 10255	MUN2213
7U01	4822 130 60373	BC856B
7U02	4822 130 60373	BC856B
7U03	9322 091 04668	SI4410DY
7U04	9322 091 04668	SI4410DY
7U05	4822 130 60373	BC856B

7U06	9340 425 20115	BC847BS
7U07	3198 010 42320	BC857BW
7U08	4822 130 42804	BC817-25
7U09	4822 130 42804	BC817-25
7U10	5322 130 60159	BC846B
7U11	5322 130 60159	BC846B
7U12	5322 130 60159	BC846B
7U13	3198 010 42310	BC847BW
7V01	9322 196 44671	EP1C6Q240C8
7V02	9322 159 45668	DS90C385MTD
7Y00	9322 181 15668	IRFR9024N
7Y01	3198 010 42310	BC847BW

Small Signal Board (AB) [B]

Various

0036	3104 308 10601	Connector plate assy EU
0036	3104 308 11981	Connector plate assy AP
0067	3104 304 22841	FFC RELIEVE ON SHIELDING
0072	3104 301 24451	Frame SSB A-side
0073	3104 301 24461	Cover SSB A-side
0074	3104 301 24221	Cover SSB Z-side
0075	3104 301 24201	Frame SSB Z-side
0079	3104 308 11161	Shielding cover
0080	3104 301 24471	Frame SSB Z-side
0305	3104 304 23841	Xtal grommet
0308	3104 304 23841	Xtal grommet
0325	2422 034 21798	Screwlock
0603	3104 317 05161	Softw. (check Prod.Surv.)
1001	2422 543 89022	Xtal 6MHz 20p
1305	2422 543 01184	Xtal 4.433619MHz 20p
1308	2422 543 01183	Xtal 3.579545MHz 16p
1402	2422 127 00543	Switch 1p 2pos
1403	2422 086 11092	Fuse 500mA 50V F SMD
1407	2422 549 44324	Filt. 5.5/5.74MHz
1408	2422 549 44372	SAW 38.9MHz K3953L
1409	2422 549 44369	SAW 38.9MHz K9656L
1702	2422 540 98456	Resonator 12MHz
1A00	2422 543 89019	Xtal 18.432MHz 12p
1D01	2422 025 16984	Connector 15p f
1E02	2422 025 17274	Connector 10p m
1E04	2422 025 17103	Connector 3p m SMD
1I01	4822 267 10771	Socket 2 x SCART
1I04	4822 267 10771	Socket 2 x SCART
1I04	4822 267 60385	Connector 21p f
1I05	2422 026 05213	Soc CINCH 3p BkWhRd
1I07	2422 026 05501	Socket CINCH 6p f
1I19	4822 267 10748	Connector 3p
1I70	2422 025 16966	Connector 5p m SMD
1S20	2422 025 10771	Connector 10p m
1S36	2422 025 10655	Connector 11p m
1S43	2422 025 10768	Connector 3p m
1S46	4822 267 10637	Connector 5p
1S88	4822 265 11352	Connector 8p
1T01	3139 147 19341	Tuner UV1318S/A I-3
1U01▲	2422 086 11114	Fuse 1A T 125V
1Y01	2422 025 17706	Connector 20p m
1Y45	2422 025 17103	Connector 3p m SMD
1Y55	2422 025 17192	Connector 9p m
8190	3104 311 06181	Cable 2p3/80 inlet

⊣⊢

2000	4822 124 12095	100µF 20% 16V
2001	4822 124 12095	100µF 20% 16V
2002	4822 126 11669	27pF 5% 50V 0603
2003	4822 126 13879	220nF +80-20% 16V
2004	4822 126 13879	220nF +80-20% 16V
2005	2238 586 59812	100nF 20% 50V 0603
2006	2238 586 59812	100nF 20% 50V 0603
2007	2238 586 59812	100nF 20% 50V 0603
2008	2238 586 59812	100nF 20% 50V 0603
2010	4822 126 11785	47pF 5% 50V 0603
2011	4822 126 11785	47pF 5% 50V 0603
2012	4822 126 11785	47pF 5% 50V 0603
2013	2020 021 91557	100µF 20% 16V
2016	4822 124 12095	100µF 20% 16V
2017	2238 586 59812	100nF 20% 50V 0603
2018	2222 867 15339	33pF 5% 50V 0603
2019	2238 586 59812	100nF 20% 50V 0603
2020	4822 126 13883	220pF 5% 50V
2022	2238 586 59812	100nF 20% 50V 0603
2023	2238 586 59812	100nF 20% 50V 0603
2024	2238 586 59812	100nF 20% 50V 0603
2025	2238 586 59812	100nF 20% 50V 0603
2026	2238 586 59812	100nF 20% 50V 0603
2027	2238 586 59812	100nF 20% 50V 0603
2028	2238 586 59812	100nF 20% 50V 0603
2029	2238 586 59812	100nF 20% 50V 0603
2031	2238 586 59812	100nF 20% 50V 0603
2033	4822 126 14226	82pF 5% 50V 0603
2034	4822 126 14226	82pF 5% 50V 0603
2035	4822 126 14226	82pF 5% 50V 0603
2036	4822 126 14226	82pF 5% 50V 0603
2037	4822 126 14226	82pF 5% 50V 0603
2038	2238 586 59812	100nF 20% 50V 0603
2039	2238 586 59812	100nF 20% 50V 0603
2040	2238 586 59812	100nF 20% 50V 0603
2063	3198 017 34730	47nF 16V 0603
2067	2238 586 59812	100nF 20% 50V 0603
2073	2238 586 59812	100nF 20% 50V 0603
2074	2238 586 59812	100nF 20% 50V 0603
2302	2238 586 59812	100nF 20% 50V 0603
2305	2238 586 59812	100nF 20% 50V 0603
2316	2238 586 59812	100nF 20% 50V 0603
2322	2238 586 59812	100nF 20% 50V 0603
2340	2020 021 91557	100µF 20% 16V
2350	2238 586 59812	100nF 20% 50V 0603
2351	2238 586 59812	100nF 20% 50V 0603
2352	2238 586 59812	100nF 20% 50V 0603
2353	2238 586 59812	100nF 20% 50V 0603
2354	2238 586 59812	100nF 20% 50V 0603
2356	2238 586 59812	100nF 20% 50V 0603
2357	2238 586 59812	100nF 20% 50V 0603
2358	5322 126 11579	3.3nF 10% 63V
2359	4822 122 33752	15pF 5% 50V
2360	3198 016 31280	1.2pF 0.25pF 50V 0603
2361	3198 016 31280	1.2pF 0.25pF 50V 0603
2362	4822 126 11663	12pF 5% 50V 0603
2365	2238 586 59812	100nF 20% 50V 0603
2366	2238 586 59812	100nF 20% 50V 0603
2367	2238 586 59812	100nF 20% 50V 0603
2368	2238 586 59812	100nF 20% 50V 0603
2369	2238 586 59812	100nF 20% 50V 0603
2370	2238 586 59812	100nF 20% 50V 0603
2371	4822 126 13193	4.7nF 10% 63V
2372	2022 552 05679	1µF 10% 16V 0805
2373	2238 586 59812	100nF 20% 50V 0603
2374	4822 126 14491	2.2µF 10V 0805
2375	2238 916 15641	22nF 10% 25V 0603
2376	2238 586 59812	100nF 20% 50V 0603
2377	2020 021 91557	100µF 20% 16V
2378	2238 586 59812	100nF 20% 50V 0603
2384	2238 586 59812	100nF 20% 50V 0603
2385	2238 586 59812	100nF 20% 50V 0603
2390	2238 586 59812	100nF 20% 50V 0603
2391	2238 586 59812	100nF 20% 50V 0603
2394	4822 126 14491	2.2µF 10V 0805
2403	2238 586 59812	100nF 20% 50V 0603
2404	2022 552 05615	2.2µF 10% 6.3V 0805
2404	2022 552 05679	1µF 10% 16V 0805
2405	4822 126 13193	4.7nF 10% 63V
2406	4822 126 13883	220pF 5% 50V
2407	4822 126 14221	68pF 5% 50V NP0 0603
2408	3198 016 33380	3.3pF 50V 0603
2409	4822 126 14491	2.2µF 10V 0805
2410	2020 021 91557	100µF 20% 16V
2411	2238 586 59812	100nF 20% 50V 0603
2412	4822 126 13193	4.7nF 10% 63V
2414	2020 021 91557	100µF 20% 16V
2415	2238 586 59812	100nF 20% 50V 0603
2417	3198 017 44740	470nF 10V 0603
2418	3198 016 35680	5.6pF 0.5pF 50V 0603
2422	2238 586 59812	100nF 20% 50V 0603
2424	2238 586 59812	100nF 20% 50V 0603
2425	2020 021 91557	100µF 20% 16V
2432	2238 586 59812	100nF 20% 50V 0603
2433	2238 586 59812	100nF 20% 50V 0603
2709	2238 586 59812	100nF 20% 50V 0603
2710	2238 586 59812	100nF 20% 50V 0603
2711	2238 586 59812	100nF 20% 50V 0603
2712	2238 586 59812	100nF 20% 50V 0603
2713	4822 122 33761	22pF 5% 50V
2714	4822 122 33761	22pF 5% 50V
2715	2238 586 59812	100nF 20% 50V 0603
2716	2238 586 59812	100nF 20% 50V 0603
2718	4822 122 33752	15pF 5% 50V
2719	4822 122 33752	15pF 5% 50V
2720	4822 122 33752	15pF 5% 50V
2721	2020 552 94427	100pF 5% 50V
2722	2020 552 94427	100pF 5% 50V
2723	3198 016 31020	1nF 25V 0603
2724	2238 586 59812	100nF 20% 50V 0603
2728	2020 021 91554	10µF 20% 16V
2729	2238 586 59812	100nF 20% 50V 0603
2730	2020 021 91557	100µF 20% 16V
2731	2238 586 59812	100nF 20% 50V 0603
2732	2238 586 59812	100nF 20% 50V 0603
2733	2238 586 59812	100nF 20% 50V 0603
2734	2238 586 59812	100nF 20% 50V 0603
2735	2238 586 59812	100nF 20% 50V 0603
2740	2238 916 15641	22nF 10% 25V 0603
2741	2238 916 15641	22nF 10% 25V 0603
2742	2238 916 15641	22nF 10% 25V 0603
2743	2238 586 59812	100nF 20% 50V 0603
2744	2238 586 59812	100nF 20% 50V 0603
2745	2238 586 59812	100nF 20% 50V 0603
2746	2238 586 59812	100nF 20% 50V 0603
2747	2238 586 59812	100nF 20% 50V 0603
2748	2238 586 59812	100nF 20% 50V 0603
2749	2020 021 91554	10µF 20% 16V
2750	2238 586 59812	100nF 20% 50V 0603
2751	2238 586 59812	100nF 20% 50V 0603
2752	2238 586 59812	100nF 20% 50V 0603
2753	2238 586 59812	100nF 20% 50V 0603
2754	2238 586 59812	100nF 20% 50V 0603
2755	2238 586 59812	100nF 20% 50V 0603
2756	2238 586 59812	100nF 20% 50V 0603
2757	2238 916 15641	22nF 10% 25V 0603
2760	2238 586 59812	100nF 20% 50V 0603
2761	2238 586 59812	100nF 20% 50V 0603
2762	2238 586 59812	100nF 20% 50V 0603
2763	2238 586 59812	100nF 20% 50V 0603
2764	2238 586 59812	100nF 20% 50V 0603
2765	2238 586 59812	100nF 20% 50V 0603
2766	2238 586 59812	100nF 20% 50V 0603
2767	2238 586 59812	100nF 20% 50V 0603
2768	2238 586 59812	100nF 20% 50V 0603
2769	2238 586 59812	100nF 20% 50V 0603
2770	2020 021 91554	10µF 20% 16V
2771	2238 586 59812	100nF 20% 50V 0603
2772	2020 021 91557	100µF 20% 16V
2773	2238 586 59812	100nF 20% 50V 0603
2774	2238 586 59812	100nF 20% 50V 0603
2775	2238 586 59812	100nF 20% 50V 0603
2776	2238 586 59812	100nF 20% 50V 0603
2777	2238 586 59812	100nF 20% 50V 0603
2778	2238 586 59812	100nF 20% 50V 0603
2779	2238 586 59812	100nF 20% 50V 0603
2780	2238 586 59812	100nF 20% 50V 0603
2781	2238 586 59812	100nF 20% 50V 0603
2782	2238 586 59812	100nF 20% 50V 0603
2784	2238 586 59812	100nF 20% 50V 0603
2785	2238 586 59812	100nF 20% 50V 0603
2786	2238 586 59812	100nF 20% 50V 0603
2787	2238 586 59812	100nF 20% 50V 0603
2788	2238 586 59812	100nF 20% 50V 0603
2789	2238 586 59812	100nF 20% 50V 0603
2790	2238 586 59812	100nF 20% 50V 0603
2791	2238 586 59812	100nF 20% 50V 0603
2792	2020 021 91554	10µF 20% 16V
2793	2238 586 59812	100nF 20% 50V 0603
2794	2020 021 91554	10µF 20% 16V
2795	2238 586 59812	100nF 20% 50V 0603
2796	2238 586 59812	100nF 20% 50V 0603
2797	2238 586 59812	100nF 20% 50V 0603
2798	2238 586 59812	100nF 20% 50V 0603
2799	2238 586 59812	100nF 20% 50V 0603
2800	2238 586 59812	100nF 20% 50V 0603
2801	2238 586 59812	100nF 20% 50V 0603
2802	2238 586 59812	100nF 20% 50V 0603
2803	2238 586 59812	100nF 20% 50V 0603
2804	2238 586 59812	100nF 20% 50V 0603
2805	2238 586 59812	100nF 20% 50V 0603
2806	2238 586 59812	100nF 20% 50V 0603
2807	2238 586 59812	100nF 20% 50V 0603
2808	2020 021 91554	10µF 20% 16V
2809	2238 586 59812	100nF 20% 50V 0603
2810	2238 586 59812	100nF 20% 50V 0603
2811	2238 586 59812	100nF 20% 50V 0603
2812	2238 586 59812	100nF 20% 50V 0603
2813	2238 586 59812	100nF 20% 50V 0603
2817	2238 586 59812	100nF 20% 50V 0603
2819	2238 586 59812	100nF 20% 50V 0603
2820	2238 586 59812	100nF 20% 50V 0603
2821	2238 586 59812	100nF 20% 50V 0603
2822	2238 586 59812	100nF 20% 50V 0603
2823	5322 126 11578	1nF 10% 50V 0603
2824	5322 126 11578	1nF 10% 50V 0603
2825	2238 586 59812	100nF 20% 50V 0603
2826	2238 586 59812	100nF 20% 50V 0603
2829	2238 586 59812	100nF 20% 50V 0603
2831	4822 126 14221	68pF 5% 50V NP0 0603
2832	2238 586 59812	100nF 20% 50V 0603
2833	2238 586 59812	100nF 20% 50V 0603
2834	2238 586 59812	100nF 20% 50V 0603
2835	2238 586 59812	100nF 20% 50V 0603
2836	2238 586 59812	100nF 20% 50V 0603
2837	2238 586 59812	100nF 20% 50V 0603
2838	2238 586 59812	100nF 20% 50V 0603
2842	2238 586 59812	100nF 20% 50V 0603
2843	2238 586 59812	100nF 20% 50V 0603
2844	2238 586 59812	100nF 20% 50V 0603
2845	2238 586 59812	100nF 20% 50V 0603
2846	2238 586 59812	100nF 20% 50V 0603
2847	2238 586 59812	100nF 20% 50V 0603
2848	2238 586 59812	100nF 20% 50V 0603

2851	2238 586 59812	100nF 20% 50V 0603
2852	2238 586 59812	100nF 20% 50V 0603
2853	2238 586 59812	100nF 20% 50V 0603
2854	2238 586 59812	100nF 20% 50V 0603
2855	2238 586 59812	100nF 20% 50V 0603
2857	2238 586 59812	100nF 20% 50V 0603
2858	4822 124 12095	100µF 20% 16V
2859	2238 586 59812	100nF 20% 50V 0603
2860	2238 586 59812	100nF 20% 50V 0603
2861	2238 586 59812	100nF 20% 50V 0603
2862	2238 586 59812	100nF 20% 50V 0603
2863	2238 586 59812	100nF 20% 50V 0603
2864	2238 586 59812	100nF 20% 50V 0603
2865	2238 586 59812	100nF 20% 50V 0603
2866	2238 586 59812	100nF 20% 50V 0603
2867	2238 586 59812	100nF 20% 50V 0603
2870	2020 021 91554	10µF 20% 16V
2871	2020 021 91557	100µF 20% 16V
2872	2238 586 59812	100nF 20% 50V 0603
2874	2020 021 91554	10µF 20% 16V
2877	2020 021 91557	100µF 20% 16V
2880	2020 021 91554	10µF 20% 16V
2881	4822 126 11669	27pF 5% 50V 0603
2884	2238 586 59812	100nF 20% 50V 0603
2886	2238 586 59812	100nF 20% 50V 0603
2887	2238 586 59812	100nF 20% 50V 0603
2888	2238 586 59812	100nF 20% 50V 0603
2889	2238 586 59812	100nF 20% 50V 0603
2890	2238 586 59812	100nF 20% 50V 0603
2891	2238 586 59812	100nF 20% 50V 0603
2892	2238 586 59812	100nF 20% 50V 0603
2893	2238 586 59812	100nF 20% 50V 0603
2894	2238 586 59812	100nF 20% 50V 0603
2895	2238 586 59812	100nF 20% 50V 0603
2896	2238 586 59812	100nF 20% 50V 0603
2897	2238 586 59812	100nF 20% 50V 0603
2898	2238 586 59812	100nF 20% 50V 0603
2899	2238 586 59812	100nF 20% 50V 0603
2A00	2020 552 96618	1nF 10% 50V 0402
2A01	2020 021 91557	100µF 20% 16V
2A02	2022 552 05679	1µF 10% 16V 0805
2A03	2020 021 91557	100µF 20% 16V
2A04	2022 552 05679	1µF 10% 16V 0805
2A05	2020 021 91557	100µF 20% 16V
2A06	2020 552 96618	1nF 10% 50V 0402
2A07	2020 021 91557	100µF 20% 16V
2A08	2022 552 05679	1µF 10% 16V 0805
2A10	2238 586 59812	100nF 20% 50V 0603
2A11	2238 586 59812	100nF 20% 50V 0603
2A13	2020 552 96618	1nF 10% 50V 0402
2A14	2020 552 96618	1nF 10% 50V 0402
2A15	2020 021 91557	100µF 20% 16V
2A16	2238 586 59812	100nF 20% 50V 0603
2A17	2020 552 96618	1nF 10% 50V 0402
2A18	2020 021 91557	100µF 20% 16V
2A19	3198 017 41050	1µF 10V 0603
2A21	2238 586 59812	100nF 20% 50V 0603
2A22	2238 586 59812	100nF 20% 50V 0603
2A23	2238 586 59812	100nF 20% 50V 0603
2A26	2238 586 59812	100nF 20% 50V 0603
2A27	2020 552 96618	1nF 10% 50V 0402
2A29	2238 869 15101	100pF 5% 50V 0402
2A30	2238 869 15101	100pF 5% 50V 0402
2A31	2238 586 59812	100nF 20% 50V 0603
2A32	2238 869 15101	100pF 5% 50V 0402
2A33	2238 586 59812	100nF 20% 50V 0603
2A34	2238 869 15101	100pF 5% 50V 0402
2A35	2020 552 96618	1nF 10% 50V 0402
2A36	2238 869 15101	100pF 5% 50V 0402
2A37	2238 869 15101	100pF 5% 50V 0402
2A38	2238 869 15101	100pF 5% 50V 0402
2A40	2238 586 59812	100nF 20% 50V 0603
2A41	2020 021 91554	10µF 20% 16V
2A42	2020 021 91554	10µF 20% 16V
2A43	2020 021 91554	10µF 20% 16V
2A44	2238 586 59812	100nF 20% 50V 0603
2A46	2022 552 05679	1µF 10% 16V 0805
2A47	2020 552 96618	1nF 10% 50V 0402
2A48	2020 552 96618	1nF 10% 50V 0402
2A49	2022 552 05679	1µF 10% 16V 0805
2A50	2020 552 96618	1nF 10% 50V 0402
2A51	2020 552 96618	1nF 10% 50V 0402
2A52	2020 552 96618	1nF 10% 50V 0402
2A54	2020 552 96618	1nF 10% 50V 0402
2A57	2020 552 96618	1nF 10% 50V 0402
2A60	2020 552 96618	1nF 10% 50V 0402
2A65	2020 552 96618	1nF 10% 50V 0402
2A67	2022 552 05679	1µF 10% 16V 0805
2A68	2020 552 96618	1nF 10% 50V 0402
2A71	2022 552 05679	1µF 10% 16V 0805
2A73	2020 552 96618	1nF 10% 50V 0402
2A77	2020 552 96618	1nF 10% 50V 0402
2A79	2238 586 59812	100nF 20% 50V 0603
2A82	3198 017 34730	47nF 16V 0603
2A91	2022 552 05679	1µF 10% 16V 0805
2A92	2022 552 05679	1µF 10% 16V 0805
2A95	4822 126 13883	220pF 5% 50V
2A99	2238 869 15101	100pF 5% 50V 0402
2AA0	2238 869 15101	100pF 5% 50V 0402
2AA1	2238 869 15101	100pF 5% 50V 0402
2AA5	2238 869 15101	100pF 5% 50V 0402
2AA6	2020 552 96618	1nF 10% 50V 0402
2AA7	2020 552 96618	1nF 10% 50V 0402
2AA8	2020 552 96618	1nF 10% 50V 0402
2AA9	3198 016 35680	5.6pF 0.5pF 50V 0603
2AB0	3198 016 35680	5.6pF 0.5pF 50V 0603
2AB2	2020 552 96618	1nF 10% 50V 0402
2AB3	2022 552 05679	1µF 10% 16V 0805
2AB4	2022 552 05679	1µF 10% 16V 0805
2AB5	2020 021 91554	10µF 20% 16V
2AB8	2022 552 05679	1µF 10% 16V 0805
2C00	2238 586 59812	100nF 20% 50V 0603
2C01	2238 586 59812	100nF 20% 50V 0603
2C02	2238 586 59812	100nF 20% 50V 0603
2D01	2238 869 15101	100pF 5% 50V 0402
2D03	2020 552 96618	1nF 10% 50V 0402
2D04	2020 552 96618	1nF 10% 50V 0402
2D09	2238 586 59812	100nF 20% 50V 0603
2D10	2238 586 59812	100nF 20% 50V 0603
2D11	2238 586 59812	100nF 20% 50V 0603
2D12	2238 586 59812	100nF 20% 50V 0603
2D22	2238 586 59812	100nF 20% 50V 0603
2D50	4822 126 13879	220nF +80-20% 16V
2D51	2238 586 59812	100nF 20% 50V 0603
2D52	2238 586 59812	100nF 20% 50V 0603
2D53	2022 552 05616	4.7µF 5% 6.3V
2D54	2022 552 05616	4.7µF 5% 6.3V
2D55	2022 552 05616	4.7µF 5% 6.3V
2D57	2238 586 59812	100nF 20% 50V 0603
2D58	2022 552 05616	4.7µF 5% 6.3V
2D59	2022 552 05616	4.7µF 5% 6.3V
2D60	2022 552 05616	4.7µF 5% 6.3V
2D61	2022 552 05616	4.7µF 5% 6.3V
2D62	4822 126 13879	220nF +80-20% 16V
2D63	2022 552 05616	4.7µF 5% 6.3V
2D64	2022 552 05616	4.7µF 5% 6.3V
2D65	3198 032 47170	47µF 20% 16V
2D66	2238 586 59812	100nF 20% 50V 0603
2D67	2238 586 59812	100nF 20% 50V 0603
2D68	2238 586 59812	100nF 20% 50V 0603
2D69	3198 016 31020	1nF 25V 0603
2D70	2238 586 59812	100nF 20% 50V 0603
2D72	4822 126 11785	47pF 5% 50V 0603
2D73	4822 126 11785	47pF 5% 50V 0603
2D74	3198 032 47170	47µF 20% 16V
2D75	2238 586 59812	100nF 20% 50V 0603
2D76	2022 552 05616	4.7µF 5% 6.3V
2D77	2238 586 59812	100nF 20% 50V 0603
2D78	2238 586 59812	100nF 20% 50V 0603
2D80	2238 586 59812	100nF 20% 50V 0603
2D81	2238 586 59812	100nF 20% 50V 0603
2E02	4822 124 23237	22µF 6.3V
2E04	3198 035 04710	470pF 50V 0402
2E05	4822 124 23237	22µF 6.3V
2E09	4822 124 23237	22µF 6.3V
2E10	2238 586 59812	100nF 20% 50V 0603
2E11	4822 124 23237	22µF 6.3V
2E12	2022 552 05616	4.7µF 5% 6.3V
2E14	2238 586 59812	100nF 20% 50V 0603
2E15	2238 586 59812	100nF 20% 50V 0603
2E17	2022 552 05616	4.7µF 5% 6.3V
2E18	2022 552 05616	4.7µF 5% 6.3V
2E19	2238 586 59812	100nF 20% 50V 0603
2E20	2238 586 59812	100nF 20% 50V 0603
2E21	2238 586 59812	100nF 20% 50V 0603
2E22	2022 552 05679	1µF 10% 16V 0805
2E23	2238 586 59812	100nF 20% 50V 0603
2E24	2238 586 59812	100nF 20% 50V 0603
2E25	2238 586 59812	100nF 20% 50V 0603
2E26	2022 552 05616	4.7µF 5% 6.3V
2E28	2238 586 59812	100nF 20% 50V 0603
2E30	2022 552 05616	4.7µF 5% 6.3V
2E35	2238 586 59812	100nF 20% 50V 0603
2E37	4822 124 23237	22µF 6.3V
2E39	2022 552 05616	4.7µF 5% 6.3V
2E40	3198 032 15190	100µF 20% 4V
2E42	2022 009 00656	47µF 20% 6,3V
2E44	2022 009 00656	47µF 20% 6,3V
2E50	4822 124 23237	22µF 6.3V
2E51	2022 552 05679	1µF 10% 16V 0805
2E52	2238 586 59812	100nF 20% 50V 0603
2E54	2238 586 59812	100nF 20% 50V 0603
2E55	2022 552 05616	4.7µF 5% 6.3V
2E56	2238 586 59812	100nF 20% 50V 0603
2E58	2238 586 59812	100nF 20% 50V 0603
2E59	2238 586 59812	100nF 20% 50V 0603
2E61	2238 586 59812	100nF 20% 50V 0603
2E62	2238 586 59812	100nF 20% 50V 0603
2E63	2238 586 59812	100nF 20% 50V 0603
2E64	2238 586 59812	100nF 20% 50V 0603
2E66	2238 586 59812	100nF 20% 50V 0603
2E68	2022 552 05616	4.7µF 5% 6.3V
2E69	2238 586 59812	100nF 20% 50V 0603
2E70	2238 586 59812	100nF 20% 50V 0603
2E71	2238 586 59812	100nF 20% 50V 0603
2E72	2238 586 59812	100nF 20% 50V 0603
2E73	2238 586 59812	100nF 20% 50V 0603
2E74	2238 586 59812	100nF 20% 50V 0603
2E75	2238 586 59812	100nF 20% 50V 0603
2E76	2238 586 59812	100nF 20% 50V 0603
2E78	2238 586 59812	100nF 20% 50V 0603
2E79	2238 586 59812	100nF 20% 50V 0603
2E80	2238 586 59812	100nF 20% 50V 0603
2E83	2238 586 59812	100nF 20% 50V 0603
2E84	2238 586 59812	100nF 20% 50V 0603
2E86	2238 586 59812	100nF 20% 50V 0603
2E87	4822 124 12095	100µF 20% 16V
2E88	2238 869 15101	100pF 5% 50V 0402
2E89	2238 869 15101	100pF 5% 50V 0402
2E90	2238 869 15101	100pF 5% 50V 0402
2E91	2238 869 15101	100pF 5% 50V 0402
2E92	2238 869 15101	100pF 5% 50V 0402
2E93	2238 869 15101	100pF 5% 50V 0402
2E94	2238 869 15101	100pF 5% 50V 0402
2E95	2238 869 15101	100pF 5% 50V 0402
2E96	2238 869 15101	100pF 5% 50V 0402
2E97	2238 869 15101	100pF 5% 50V 0402
2E98	2238 869 15101	100pF 5% 50V 0402
2E99	2238 869 15101	100pF 5% 50V 0402
2I07	4822 051 30008	Jumper 0603
2I09	2020 552 94427	100pF 5% 50V
2I10	2020 552 94427	100pF 5% 50V
2I11	2020 552 94427	100pF 5% 50V
2I12	4822 126 14241	330pF 0603 50V
2I13	2020 552 94427	100pF 5% 50V
2I14	2020 552 94427	100pF 5% 50V
2I15	4822 126 14241	330pF 0603 50V
2I16	2020 552 94427	100pF 5% 50V
2I17	2020 552 94427	100pF 5% 50V
2I18	2020 552 94427	100pF 5% 50V
2I19	2020 552 94427	100pF 5% 50V
2I20	4822 126 14241	330pF 0603 50V
2I21	2020 552 94427	100pF 5% 50V
2I22	2020 552 94427	100pF 5% 50V
2I23	2020 552 94427	100pF 5% 50V
2I24	2020 552 94427	100pF 5% 50V
2I25	4822 126 14241	330pF 0603 50V
2I26	2020 552 94427	100pF 5% 50V
2I27	2020 552 94427	100pF 5% 50V
2I36	2020 552 94427	100pF 5% 50V
2I39	3198 024 44730	47nF 50V 0603
2I46	3198 016 31020	1nF 25V 0603
2I47	3198 016 31020	1nF 25V 0603
2I50	4822 126 13193	4.7nF 10% 63V
2I51	4822 126 13193	4.7nF 10% 63V
2I57	2020 552 94427	100pF 5% 50V
2I58	2020 552 94427	100pF 5% 50V
2I71	2022 552 05679	1µF 10% 16V 0805
2I72	2022 552 05679	1µF 10% 16V 0805
2I73	2022 552 05679	1µF 10% 16V 0805
2I74	2022 552 05679	1µF 10% 16V 0805
2I75	2022 552 05679	1µF 10% 16V 0805
2I76	2022 552 05679	1µF 10% 16V 0805
2I77	2022 552 05679	1µF 10% 16V 0805
2I78	2022 552 05679	1µF 10% 16V 0805
2I79	2020 021 91886	22µF 20% 16V
2I80	2022 552 05679	1µF 10% 16V 0805
2I81	2022 552 05679	1µF 10% 16V 0805
2I82	2022 552 05679	1µF 10% 16V 0805
2I83	2022 552 05679	1µF 10% 16V 0805
2I84	2022 552 05679	1µF 10% 16V 0805
2I85	2022 552 05679	1µF 10% 16V 0805
2I99	2022 552 05679	1µF 10% 16V 0805
2IA0	2022 552 05679	1µF 10% 16V 0805
2IA1	2022 552 05679	1µF 10% 16V 0805
2IA2	2022 552 05679	1µF 10% 16V 0805
2IA4	2022 552 05679	1µF 10% 16V 0805
2IA5	2020 021 91557	100µF 20% 16V
2IA7	2022 552 05679	1µF 10% 16V 0805
2IA9	2020 021 91557	100µF 20% 16V
2IB0	2022 552 05679	1µF 10% 16V 0805
2IB1	2022 552 05679	1µF 10% 16V 0805
2IB2	2022 552 05679	1µF 10% 16V 0805
2IC0	4822 124 23002	10µF 16V
2IC1	4822 124 23002	10µF 16V
2IC3	2238 586 59812	100nF 20% 50V 0603
2IC9	4822 126 13881	470pF 5% 50V
2IG1	2238 586 59812	100nF 20% 50V 0603
2IH3	3198 016 31020	1nF 25V 0603
2IJ4	2238 586 59812	100nF 20% 50V 0603
2IK0	2022 552 05679	1µF 10% 16V 0805
2L01	3198 035 71040	100nF 10% 16V 0402

2L02	3198 035 71040	100nF 10% 16V 0402
2L03	3198 035 71040	100nF 10% 16V 0402
2L04	3198 035 71040	100nF 10% 16V 0402
2L05	3198 035 71040	100nF 10% 16V 0402
2L06	3198 035 71040	100nF 10% 16V 0402
2L07	3198 035 71040	100nF 10% 16V 0402
2L08	3198 035 71040	100nF 10% 16V 0402
2L09	3198 035 71040	100nF 10% 16V 0402
2L10	3198 035 71040	100nF 10% 16V 0402
2L11	2238 586 59812	100nF 20% 50V 0603
2L12	3198 035 71040	100nF 10% 16V 0402
2L13	3198 035 71040	100nF 10% 16V 0402
2L14	3198 035 71040	100nF 10% 16V 0402
2L15	3198 035 71040	100nF 10% 16V 0402
2L16	3198 035 71040	100nF 10% 16V 0402
2L17	3198 035 71040	100nF 10% 16V 0402
2L18	2020 552 96305	4.7µF 20-80% 10V
2L19	4822 124 23002	10µF 16V
2L20	3198 035 71040	100nF 10% 16V 0402
2L21	3198 035 71040	100nF 10% 16V 0402
2L22	5322 126 11583	10nF 10% 50V 0603
2L23	5322 126 11583	10nF 10% 50V 0603
2L24	5322 126 11583	10nF 10% 50V 0603
2L25	2238 586 59812	100nF 20% 50V 0603
2L26	3198 017 33330	33nF 20% 16V 0603
2L27	4822 126 13193	4.7nF 10% 63V
2L28	4822 126 14226	82pF 5% 50V 0603
2L29	4822 122 33761	22pF 5% 50V
2L30	4822 126 14226	82pF 5% 50V 0603
2L31	3198 017 34730	47nF 16V 0603
2L32	5322 126 11579	3.3nF 10% 63V
2L33	2238 586 59812	100nF 20% 50V 0603
2L34	2238 586 59812	100nF 20% 50V 0603
2L35	4822 126 13879	220nF +80-20% 16V
2L36	3198 016 31020	1nF 25V 0603
2L37	3198 016 31020	1nF 25V 0603
2L38	3198 016 31020	1nF 25V 0603
2L39	2238 586 59812	100nF 20% 50V 0603
2L40	2020 552 96305	4.7µF 20-80% 10V
2L41	3198 016 31020	1nF 25V 0603
2L42	3198 016 31020	1nF 25V 0603
2L43	2238 586 59812	100nF 20% 50V 0603
2L44	2020 552 96305	4.7µF 20-80% 10V
2L45	3198 016 31020	1nF 25V 0603
2L46	3198 016 31020	1nF 25V 0603
2L47	2238 586 59812	100nF 20% 50V 0603
2L48	4822 122 33752	15pF 5% 50V
2L50	4822 122 33752	15pF 5% 50V
2L52	3198 017 34730	47nF 16V 0603
2L53	4822 124 81059	220µF 20% 4V
2L54	3198 017 34730	47nF 16V 0603
2L57	3198 017 34730	47nF 16V 0603
2L58	4822 124 81059	220µF 20% 4V
2L59	2020 552 96618	1nF 10% 50V 0402
2L60	2222 867 15339	33pF 5% 50V 0603
2L63	4822 126 11785	47pF 5% 50V 0603
2P80	4822 124 12095	100µF 20% 16V
2P81	2238 586 59812	100nF 20% 50V 0603
2S01	2238 586 59812	100nF 20% 50V 0603
2S02	2238 586 59812	100nF 20% 50V 0603
2S03	2238 586 59812	100nF 20% 50V 0603
2S04	2238 586 59812	100nF 20% 50V 0603
2S05	2238 586 59812	100nF 20% 50V 0603
2S06	2020 552 94427	100pF 5% 50V
2S07	2020 552 94427	100pF 5% 50V
2S08	2020 552 94427	100pF 5% 50V
2S09	2020 552 94427	100pF 5% 50V
2S11	2020 552 94427	100pF 5% 50V
2S13	2020 552 94427	100pF 5% 50V
2S14	2020 552 94427	100pF 5% 50V
2S15	2020 552 94427	100pF 5% 50V
2S16	2020 552 94427	100pF 5% 50V
2S22	3198 017 44740	470nF 10V 0603
2S25	2020 552 94427	100pF 5% 50V
2S42	4822 051 30759	75Ω 5% 0.062W
2T01	2020 021 91887	470µF 20% 16V
2T04	3198 024 44730	47nF 50V 0603
2T05	2020 021 91887	470µF 20% 16V
2T06	5322 126 11583	10nF 10% 50V 0603
2T09	3198 017 34730	47nF 16V 0603
2T12	2238 586 59812	100nF 20% 50V 0603
2T13	5322 126 11583	10nF 10% 50V 0603
2T15	2022 552 05679	1µF 10% 16V 0805
2U03	2022 552 05679	1µF 10% 16V 0805
2U04	4822 126 13482	470nF +80%/-20% 16V
2U05	5322 126 11578	1nF 10% 50V 0603
2U06	2020 021 91887	470µF 20% 16V
2U07	4822 126 14226	82pF 5% 50V 0603
2U08	2020 021 91887	470µF 20% 16V
2U09	5322 126 11578	1nF 10% 50V 0603
2U10	2020 021 91887	470µF 20% 16V
2U11	5322 126 11578	1nF 10% 50V 0603
2U12	5322 126 11583	10nF 10% 50V 0603
2U13	3198 017 44740	470nF 10V 0603

2U14	4822 126 13482	470nF +80%/-20% 16V
2U15	4822 124 12095	100µF 20% 16V
2U16	4822 126 13193	4.7nF 10% 63V
2U17	4822 126 13482	470nF +80%/-20% 16V
2U18	5322 122 33861	120pF 10% 50V
2U19	2238 586 59812	100nF 20% 50V 0603
2U20	4822 126 14491	2.2µF 10V 0805
2U21	4822 126 13482	470nF +80%/-20% 16V
2U22	4822 126 14491	2.2µF 10V 0805
2U23	4822 124 12095	100µF 20% 16V
2U24	5322 126 11578	1nF 10% 50V 0603
2U25	2238 586 59812	100nF 20% 50V 0603
2U26	2238 586 59812	100nF 20% 50V 0603
2U27	5322 126 11582	6.8nF 10% 63V
2U28	5322 126 11582	6.8nF 10% 63V
2U30	5322 122 33861	120pF 10% 50V
2U31	4822 124 12095	100µF 20% 16V
2U32	5322 126 11579	3.3nF 10% 63V
2U33	4822 126 14491	2.2µF 10V 0805
2U34	2238 916 15641	22nF 10% 25V 0603
2U35	2022 552 05679	1µF 10% 16V 0805
2V05	2238 869 15109	10pF 5% 50V 0402
2V06	2238 586 59812	100nF 20% 50V 0603
2V07	2238 586 59812	100nF 20% 50V 0603
2V08	2238 586 59812	100nF 20% 50V 0603
2V09	2238 586 59812	100nF 20% 50V 0603
2V10	2238 586 59812	100nF 20% 50V 0603
2V11	2238 586 59812	100nF 20% 50V 0603
2V12	2238 586 59812	100nF 20% 50V 0603
2V13	2238 586 59812	100nF 20% 50V 0603
2Y00	2238 586 59812	100nF 20% 50V 0603
2Y01	2238 586 59812	100nF 20% 50V 0603
2Y02	2022 552 05679	1µF 10% 16V 0805
2Y03	4822 126 14519	22pF 5% 50V 0402
2Y04	4822 126 14519	22pF 5% 50V 0402
2Y05	4822 126 14519	22pF 5% 50V 0402
2Y06	4822 126 14519	22pF 5% 50V 0402
2Y07	4822 126 14519	22pF 5% 50V 0402
2Y08	4822 126 14519	22pF 5% 50V 0402
2Y09	4822 126 14519	22pF 5% 50V 0402
2Y10	4822 126 14519	22pF 5% 50V 0402
2Y11	4822 126 14519	22pF 5% 50V 0402
2Y12	4822 126 14519	22pF 5% 50V 0402

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3001	4822 051 30472	4.7Ω 5% 0.062W
3002	4822 051 30472	4.7Ω 5% 0.062W
3003	4822 117 13525	24kΩ 1% 0.62W 0603
3005	4822 051 30103	10kΩ 5% 0.062W
3006	4822 051 30471	47Ω 5% 0.062W
3007	3198 031 14710	4 x 470Ω 5% 1206
3008	4822 117 13523	220Ω 5% 0.63W
3010	4822 051 30103	10kΩ 5% 0.062W
3011	4822 051 30103	10kΩ 5% 0.062W
3012	3198 031 11010	4 x 100Ω 5% 1206
3013	4822 051 30103	10kΩ 5% 0.062W
3014	4822 051 30682	6.8Ω 5% 0.062W
3015	4822 051 30474	470kΩ 5% 0.062W
3016	5322 117 13034	1.5kΩ 1% 0.063W 0603
3017	4822 051 30472	4.7Ω 5% 0.062W
3018	4822 051 30103	10kΩ 5% 0.062W
3019	4822 051 30472	4.7Ω 5% 0.062W
3020	4822 051 30103	10kΩ 5% 0.062W
3021	4822 051 30103	10kΩ 5% 0.062W
3022	4822 117 11817	1.2kΩ 1% 0.0625W
3023	4822 051 30222	2.2kΩ 5% 0.062W
3023	4822 051 30332	3.3Ω 5% 0.062W
3024	4822 051 30273	27kΩ 5% 0.062W
3025	4822 051 30221	220Ω 5% 0.062W
3026	4822 051 30472	4.7Ω 5% 0.062W
3027	4822 117 12925	47kΩ 1% 0.063W 0603
3028	4822 051 30472	4.7Ω 5% 0.062W
3029	3198 031 11010	4 x 100Ω 5% 1206
3030	4822 051 30222	2.2kΩ 5% 0.062W
3030	4822 051 30472	4.7Ω 5% 0.062W
3031	3198 031 11010	4 x 100Ω 5% 1206
3032	4822 051 30103	10kΩ 5% 0.062W
3033	4822 051 30103	10kΩ 5% 0.062W
3034	3198 031 11010	4 x 100Ω 5% 1206
3035	3198 031 11010	4 x 100Ω 5% 1206
3036	4822 051 30472	4.7Ω 5% 0.062W
3037	4822 051 30332	3.3Ω 5% 0.062W
3039	4822 051 30181	180Ω 5% 0.062W
3046	3198 031 11010	4 x 100Ω 5% 1206
3047	4822 051 30008	Jumper 0603
3048	3198 031 11010	4 x 100Ω 5% 1206
3049	3198 031 11010	4 x 100Ω 5% 1206
3050	3198 031 11010	4 x 100Ω 5% 1206
3051	3198 031 11010	4 x 100Ω 5% 1206
3052	3198 031 11010	4 x 100Ω 5% 1206
3053	4822 051 30103	10kΩ 5% 0.062W
3054	3198 031 11010	4 x 100Ω 5% 1206

3055	3198 031 11010	4 x 100Ω 5% 1206
3056	3198 031 11010	4 x 100Ω 5% 1206
3057	3198 031 11010	4 x 100Ω 5% 1206
3059	2322 704 66201	620Ω 1% 0603
3061	3198 031 11010	4 x 100Ω 5% 1206
3062	4822 051 30103	10kΩ 5% 0.062W
3064	3198 031 11010	4 x 100Ω 5% 1206
3065	4822 051 30472	4.7Ω 5% 0.062W
3066	4822 117 12925	47kΩ 1% 0.063W 0603
3067	4822 051 30474	470kΩ 5% 0.062W
3069	4822 051 30222	2.2kΩ 5% 0.062W
3072	3198 031 11010	4 x 100Ω 5% 1206
3073	3198 031 14710	4 x 470Ω 5% 1206
3074	3198 031 14710	4 x 470Ω 5% 1206
3076	3198 031 14710	4 x 470Ω 5% 1206
3077	4822 051 30103	10kΩ 5% 0.062W
3078	3198 031 14710	4 x 470Ω 5% 1206
3079	4822 051 30222	2.2kΩ 5% 0.062W
3080	4822 051 30472	4.7Ω 5% 0.062W
3081	4822 051 30471	47Ω 5% 0.062W
3082	3198 031 11010	4 x 100Ω 5% 1206
3083	3198 031 11010	4 x 100Ω 5% 1206
3084	4822 051 30103	10kΩ 5% 0.062W
3085	3198 031 11010	4 x 100Ω 5% 1206
3086	3198 031 11010	4 x 100Ω 5% 1206
3087	4822 051 30101	100Ω 5% 0.062W
3088	4822 051 30222	2.2kΩ 5% 0.062W
3089	4822 051 30101	100Ω 5% 0.062W
3090	3198 031 14710	4 x 470Ω 5% 1206
3091	4822 051 30008	Jumper 0603
3092	4822 051 30222	2.2kΩ 5% 0.062W
3093	4822 051 30103	10kΩ 5% 0.062W
3097	4822 051 30471	47Ω 5% 0.062W
3099	3198 031 14710	4 x 470Ω 5% 1206
3100	4822 051 30221	220Ω 5% 0.062W
3101	4822 051 30221	220Ω 5% 0.062W
3102	3198 031 11010	4 x 100Ω 5% 1206
3301	4822 117 13632	100kΩ 1% 0603 0.62W
3303	4822 117 13632	100kΩ 1% 0603 0.62W
3304▲	2322 750 63908	3.9Ω 5% Fuse 1206
3308	4822 051 20474	470kΩ 5% 0.1W
3368	4822 051 30471	47Ω 5% 0.062W
3370	4822 051 30101	100Ω 5% 0.062W
3371	4822 051 30479	47Ω 5% 0.062W
3372	4822 051 30471	47Ω 5% 0.062W
3373	4822 051 30008	Jumper 0603
3374	4822 051 30008	Jumper 0603
3375	4822 051 30008	Jumper 0603
3376	4822 051 30101	100Ω 5% 0.062W
3377	4822 051 30101	100Ω 5% 0.062W
3378	4822 051 30153	15kΩ 5% 0.062W
3379	4822 051 30008	Jumper 0603
3380	4822 051 30101	100Ω 5% 0.062W
3381	4822 051 30008	Jumper 0603
3382	3198 031 05610	560Ω 5% 0.01W 0402
3385	4822 051 30471	47Ω 5% 0.062W
3393	4822 117 13632	100kΩ 1% 0603 0.62W
3400▲	4822 117 11152	4.7Ω 5%
3402▲	2322 750 63908	3.9Ω 5% Fuse 1206
3403	4822 051 30101	100Ω 5% 0.062W
3404	4822 051 30561	560Ω 5% 0.062W
3405	4822 051 30102	1kΩ 5% 0.062W
3406	2322 702 60279	27Ω 5% 0.1W 0603
3408	4822 051 30101	100Ω 5% 0.062W
3411	3198 031 02720	2.7kΩ 5% 0.01W 0402
3412▲	4822 117 11152	4.7Ω 5%
3414	4822 051 30472	4.7Ω 5% 0.062W
3415	4822 051 30222	2.2kΩ 5% 0.062W
3418	4822 051 30391	390Ω 5% 0.062W
3419	2120 108 91909	39Ω 5% 0603
3435	4822 051 30472	4.7Ω 5% 0.062W
3436	4822 051 30181	180Ω 5% 0.062W
3437	4822 051 30471	47Ω 5% 0.062W
3439	4822 051 30391	390Ω 5% 0.062W
3441	4822 051 30562	5.6kΩ 5% 0.063W 0603
3445	4822 051 30121	120Ω 5% 0.062W
3463	4822 051 30472	4.7Ω 5% 0.062W
3468	4822 117 13632	100kΩ 1% 0603 0.62W
3473	4822 051 30102	1kΩ 5% 0.062W
3474	4822 051 30109	10Ω 5% 0.062W
3475▲	5322 117 11726	10Ω 5%
3476	4822 051 30561	560Ω 5% 0.062W
3700	4822 051 30472	4.7Ω 5% 0.062W
3701	4822 051 30472	4.7Ω 5% 0.062W
3702	4822 051 30472	4.7Ω 5% 0.062W
3703	3198 031 01090	10Ω 5% 0.01W 0402
3704	3198 031 01090	10Ω 5% 0.01W 0402
3705	3198 031 01090	10Ω 5% 0.01W 0402
3706	3198 031 01090	10Ω 5% 0.01W 0402
3707	3198 031 01090	10Ω 5% 0.01W 0402
3708	3198 031 01090	10Ω 5% 0.01W 0402
3709	4822 051 30101	100Ω 5% 0.062W
3710	4822 051 30101	100Ω 5% 0.062W
3711	4822 117 12925	47kΩ 1% 0.063W 0603

3712	4822 117 12925	47kΩ 1% 0.063W 0603
3713	4822 051 30181	180Ω 5% 0.062W
3714	4822 051 30181	180Ω 5% 0.062W
3715	4822 051 30181	180Ω 5% 0.062W
3716	4822 117 13632	100kΩ 1% 0603 0.62W
3717	4822 117 13632	100kΩ 1% 0603 0.62W
3718	4822 117 13632	100kΩ 1% 0603 0.62W
3719	4822 051 30332	3.3Ω 5% 0.062W
3720	4822 051 30103	10kΩ 5% 0.062W
3721	4822 117 13545	100Ω 1% 0402
3722	4822 051 30109	10Ω 5% 0.062W
3723	4822 051 30472	4.7Ω 5% 0.062W
3725	4822 051 30332	3.3Ω 5% 0.062W
3726	4822 117 11817	1.2kΩ 1% 0.0625W
3727	4822 051 30151	150Ω 5% 0.062W
3728	4822 051 30151	150Ω 5% 0.062W
3729	4822 117 13545	100Ω 1% 0402
3730	3198 031 06810	680Ω 5% 0.01W 0402
3736	4822 051 30101	100Ω 5% 0.062W
3737	4822 051 30102	1kΩ 5% 0.062W
3738	4822 051 30102	1kΩ 5% 0.062W
3739	3198 031 01530	15kΩ 5% 0.01W 0402
3740	4822 051 30102	1kΩ 5% 0.062W
3741	4822 051 30223	22kΩ 5% 0.062W
3743	4822 051 30153	15kΩ 5% 0.062W
3744	4822 051 30222	2.2kΩ 5% 0.062W
3745	4822 051 30102	1kΩ 5% 0.062W
3746	5322 117 13042	3.9kΩ 1% 0.063W 0603
3747	4822 051 30154	150kΩ 5% 0.062W
3748	4822 117 12891	220kΩ 1%
3749	5322 117 13042	3.9kΩ 1% 0.063W 0603
3750	4822 051 30392	3.9Ω 5% 0.063W 0603
3751	4822 051 30472	4.7Ω 5% 0.062W
3752	4822 117 12917	1Ω 5% 0.062W
3753	4822 117 12917	1Ω 5% 0.062W
3754	4822 051 30101	100Ω 5% 0.062W
3755	4822 051 30472	4.7Ω 5% 0.062W
3756	5322 117 13056	8.2kΩ 1% 0.063W 0603
3758	4822 051 30472	4.7Ω 5% 0.062W
3759	4822 051 30221	220Ω 5% 0.062W
3762	4822 051 30101	100Ω 5% 0.062W
3764	4822 051 30109	10Ω 5% 0.062W
3770	4822 117 13545	100Ω 1% 0402
3771	4822 117 12971	15Ω 5% 0603 0.62W
3772	4822 117 12971	15Ω 5% 0603 0.62W
3773	4822 117 12925	47kΩ 1% 0.063W 0603
3774	4822 117 12925	47kΩ 1% 0.063W 0603
3781	4822 117 12925	47kΩ 1% 0.063W 0603
3782	4822 117 12925	47kΩ 1% 0.063W 0603
3783	4822 117 12925	47kΩ 1% 0.063W 0603
3792	4822 051 30102	1kΩ 5% 0.062W
3793	4822 051 30222	2.2kΩ 5% 0.062W
3794	4822 051 30109	10Ω 5% 0.062W
3795	4822 051 30109	10Ω 5% 0.062W
3796	4822 051 30101	100Ω 5% 0.062W
3797	4822 051 30101	100Ω 5% 0.062W
3798	4822 051 30472	4.7Ω 5% 0.062W
3800	2322 704 61501	150Ω 1% 0603
3802	2322 704 61501	150Ω 1% 0603
3803	2322 704 61501	150Ω 1% 0603
3804	4822 051 30102	1kΩ 5% 0.062W
3811	4822 051 30759	75Ω 5% 0.062W
3812	4822 051 30759	75Ω 5% 0.062W
3814	4822 051 30759	75Ω 5% 0.062W
3815	4822 051 30759	75Ω 5% 0.062W
3817	4822 051 30759	75Ω 5% 0.062W
3818	4822 051 30759	75Ω 5% 0.062W
3819	4822 051 30759	75Ω 5% 0.062W
3820	4822 051 30759	75Ω 5% 0.062W
3821	4822 051 30759	75Ω 5% 0.062W
3822	4822 051 30759	75Ω 5% 0.062W
3823	4822 051 30759	75Ω 5% 0.062W
3824	4822 051 30759	75Ω 5% 0.062W
3825	2322 704 61501	150Ω 1% 0603
3826	2322 704 61501	150Ω 1% 0603
3827	2322 704 61501	150Ω 1% 0603
3828	4822 051 30339	33Ω 5% 0.062W
3829	4822 117 12971	15Ω 5% 0603 0.62W
3831	4822 117 13545	100Ω 1% 0402
3832	4822 117 13545	100Ω 1% 0402
3833	4822 117 13545	100Ω 1% 0402
3834	4822 117 13545	100Ω 1% 0402
3836	4822 117 13545	100Ω 1% 0402
3837	4822 117 13545	100Ω 1% 0402
3838	4822 117 13545	100Ω 1% 0402
3839	4822 117 13545	100Ω 1% 0402
3840	4822 117 13545	100Ω 1% 0402
3841	4822 117 13545	100Ω 1% 0402
3842	4822 117 13545	100Ω 1% 0402
3843	4822 117 13545	100Ω 1% 0402
3844	4822 117 13545	100Ω 1% 0402
3845	4822 117 13545	100Ω 1% 0402
3846	4822 051 30109	10Ω 5% 0.062W
3847	4822 051 30109	10Ω 5% 0.062W
3849	4822 051 30569	56Ω 5% 0.062W
3850	4822 117 13545	100Ω 1% 0402
3851	4822 117 13545	100Ω 1% 0402
3852	4822 117 13545	100Ω 1% 0402
3853	4822 117 13545	100Ω 1% 0402
3856	4822 051 30569	56Ω 5% 0.062W
3A00	4822 117 13601	22kΩ 5% 0402
3A01	4822 117 13606	10kΩ 5% 0.01W 0402
3A03▲	4822 117 13568	6.8Ω 5% 1206
3A06	4822 117 13545	100Ω 1% 0402
3A09	4822 117 13601	22kΩ 5% 0402
3A11	4822 117 11297	100kΩ 5% 0.1W
3A13	3198 031 04730	47Ω 5% 0402
3A14	3198 031 04730	47Ω 5% 0402
3A15	4822 117 11297	100kΩ 5% 0.1W
3A16	4822 117 13545	100Ω 1% 0402
3A17	4822 117 13545	100Ω 1% 0402
3A19	4822 117 13545	100Ω 1% 0402
3A20	4822 117 11297	100kΩ 5% 0.1W
3A22	4822 117 13632	100kΩ 1% 0603 0.62W
3A23	4822 117 13603	33kΩ 5% 0402
3A25	4822 051 30331	330Ω 5% 0.062W
3A26	4822 117 13603	33kΩ 5% 0402
3A27	3198 031 01530	15kΩ 5% 0.01W 0402
3A28	3198 031 01530	15kΩ 5% 0.01W 0402
3A29	4822 051 30331	330Ω 5% 0.062W
3A30	4822 117 12925	47kΩ 1% 0.063W 0603
3A32	4822 117 13545	100Ω 1% 0402
3A33	4822 117 13545	100Ω 1% 0402
3A34	4822 117 13545	100Ω 1% 0402
3A35	4822 051 30105	1MΩ 5% 0.062W
3A36	4822 117 13545	100Ω 1% 0402
3A38	4822 051 30101	100Ω 5% 0.062W
3A3A	4822 117 13545	100Ω 1% 0402
3A3B	4822 117 13545	100Ω 1% 0402
3A3E	4822 117 13545	100Ω 1% 0402
3A3F	4822 117 13545	100Ω 1% 0402
3A40	4822 117 13632	100kΩ 1% 0603 0.62W
3A42	4822 117 13545	100Ω 1% 0402
3A45	3198 031 04730	47Ω 5% 0402
3A46	4822 117 11297	100kΩ 5% 0.1W
3A47	3198 031 04730	47Ω 5% 0402
3A48	4822 117 11297	100kΩ 5% 0.1W
3A49	3198 031 04730	47Ω 5% 0402
3A50	4822 117 13545	100Ω 1% 0402
3A51	3198 031 04730	47Ω 5% 0402
3A52	3198 031 04730	47Ω 5% 0402
3A53	3198 031 04730	47Ω 5% 0402
3A55	3198 031 04720	4.7kΩ 5% 0402
3A56	3198 031 04720	4.7kΩ 5% 0402
3A66	4822 117 11297	100kΩ 5% 0.1W
3C00	4822 051 30222	2.2kΩ 5% 0.062W
3C01	4822 051 30109	10Ω 5% 0.062W
3C03	4822 051 30103	10kΩ 5% 0.062W
3C04	4822 051 30103	10kΩ 5% 0.062W
3C05	4822 051 30471	47Ω 5% 0.062W
3C08	4822 051 30103	10kΩ 5% 0.062W
3C10	4822 051 30101	100Ω 5% 0.062W
3C11	4822 051 30101	100Ω 5% 0.062W
3D40	4822 117 10361	680Ω 1% 0.1W
3D41	4822 117 13606	10kΩ 5% 0.01W 0402
3D44	4822 117 13606	10kΩ 5% 0.01W 0402
3D45	4822 051 30101	100Ω 5% 0.062W
3D46	4822 051 30102	1kΩ 5% 0.062W
3D47	4822 051 30101	100Ω 5% 0.062W
3D48	4822 051 30102	1kΩ 5% 0.062W
3D49	4822 051 30759	75Ω 5% 0.062W
3D50	4822 051 30759	75Ω 5% 0.062W
3D51	2322 704 62002	2kΩ 1%
3D52	2322 704 61002	1kΩ 1%
3D53	4822 117 13548	1kΩ 5% 0402
3D54	4822 117 13601	22kΩ 5% 0402
3D55	2322 704 61002	1kΩ 1%
3D56	2322 704 65102	5.1kΩ 1% 0603
3D57	5322 117 13047	330Ω 1% 0.063W 0603
3D58	4822 117 13548	1kΩ 5% 0402
3D60	5322 117 13036	1.2kΩ 1% 0.063W 0603
3D61	2322 704 63302	3.3kΩ 1% 0603
3D62	4822 051 30103	10kΩ 5% 0.062W
3D63	2322 704 62202	2.2kΩ 1% 0603
3D64	4822 117 13548	1kΩ 5% 0402
3D65	4822 117 13548	1kΩ 5% 0402
3D66	4822 117 13601	22kΩ 5% 0402
3D67	5322 117 13036	1.2kΩ 1% 0.063W 0603
3D68	2322 704 63302	3.3kΩ 1% 0603
3D69	4822 117 13548	1kΩ 5% 0402
3D70	2322 704 63302	3.3kΩ 1% 0603
3D71	4822 117 13548	1kΩ 5% 0402
3D72	4822 117 13601	22kΩ 5% 0402
3D73▲	4822 117 11748	Fuse 2.2Ω 5% 1206
3D79	2322 704 62202	2.2kΩ 1% 0603
3D80	4822 117 13545	100Ω 1% 0402
3D81	4822 117 10361	680Ω 1% 0.1W
3D82	4822 117 13545	100Ω 1% 0402
3D83	2322 704 61002	1kΩ 1%
3D84	4822 117 13545	100Ω 1% 0402
3D85	4822 051 30471	47Ω 5% 0.062W
3D86	4822 117 13545	100Ω 1% 0402
3D87	4822 117 13632	100kΩ 1% 0603 0.62W
3D88	5322 117 13036	1.2kΩ 1% 0.063W 0603
3D89	4822 051 30183	18kΩ 5% 0.062W
3D90	4822 117 12925	47kΩ 1% 0.063W 0603
3D92	4822 117 13606	10kΩ 5% 0.01W 0402
3D93	3198 031 04720	4.7kΩ 5% 0402
3D95	3198 031 04720	4.7kΩ 5% 0402
3D96	4822 117 13602	2.2kΩ 5% 0.01W 0402
3D97	4822 117 13545	100Ω 1% 0402
3D98	4822 117 13545	100Ω 1% 0402
3D99	4822 051 30759	75Ω 5% 0.062W
3E04	4822 051 30479	47Ω 5% 0.062W
3E05	3198 031 14710	4 x 470Ω 5% 1206
3E06	3198 031 14710	4 x 470Ω 5% 1206
3E07	2350 035 10152	4 x 1.5kΩ 5%
3E08▲	4822 117 11151	1Ω 5%
3E11	2350 035 10152	4 x 1.5kΩ 5%
3E12	2350 035 10152	4 x 1.5kΩ 5%
3E14	4822 117 13545	100Ω 1% 0402
3E16	3198 031 03320	3.3kΩ 5% 0402
3E18	4822 117 13602	2.2kΩ 5% 0.01W 0402
3E19	4822 117 13548	1kΩ 5% 0402
3E20	4822 117 13545	100Ω 1% 0402
3E21	4822 117 13548	1kΩ 5% 0402
3E22	2350 035 10152	4 x 1.5kΩ 5%
3E23	2350 035 10152	4 x 1.5kΩ 5%
3E24	2350 035 10152	4 x 1.5kΩ 5%
3E25	4822 117 13548	1kΩ 5% 0402
3E26	4822 117 13545	100Ω 1% 0402
3E27	4822 117 11297	100kΩ 5% 0.1W
3E28	4822 117 13548	1kΩ 5% 0402
3E29	4822 117 13597	330Ω 5% 0402 0.01W
3E30	4822 117 13545	100Ω 1% 0402
3E31	4822 117 13548	1kΩ 5% 0402
3E32	4822 117 13545	100Ω 1% 0402
3E33	4822 117 13545	100Ω 1% 0402
3E34	4822 117 13545	100Ω 1% 0402
3E35	4822 117 13545	100Ω 1% 0402
3E36	4822 117 13545	100Ω 1% 0402
3E37	4822 117 13548	1kΩ 5% 0402
3E38	4822 117 13545	100Ω 1% 0402
3E39	4822 117 13545	100Ω 1% 0402
3E40	4822 117 13545	100Ω 1% 0402
3E41	3198 031 14710	4 x 470Ω 5% 1206
3E42	3198 031 14710	4 x 470Ω 5% 1206
3E43	3198 031 14710	4 x 470Ω 5% 1206
3E44	3198 031 14710	4 x 470Ω 5% 1206
3E45	4822 117 13597	330Ω 5% 0402 0.01W
3E49	4822 117 13602	2.2kΩ 5% 0.01W 0402
3E50	4822 117 13606	10kΩ 5% 0.01W 0402
3E51	4822 117 13606	10kΩ 5% 0.01W 0402
3E52	4822 117 13606	10kΩ 5% 0.01W 0402
3E53	4822 117 13606	10kΩ 5% 0.01W 0402
3E55	4822 117 13606	10kΩ 5% 0.01W 0402
3E56	4822 117 13603	33kΩ 5% 0402
3E57	4822 117 11297	100kΩ 5% 0.1W
3E60	4822 117 13606	10kΩ 5% 0.01W 0402
3E62	4822 117 13548	1kΩ 5% 0402
3E63	4822 117 13606	10kΩ 5% 0.01W 0402
3E69	3198 031 04720	4.7kΩ 5% 0402
3E70	3198 031 04720	4.7kΩ 5% 0402
3E73	4822 117 13606	10kΩ 5% 0.01W 0402
3E74	4822 117 13546	47Ω 5% 0402
3E75	4822 117 13548	1kΩ 5% 0402
3E77	4822 117 13546	47Ω 5% 0402
3E78	4822 117 13546	47Ω 5% 0402
3E79	4822 117 13546	47Ω 5% 0402
3E80	4822 117 13546	47Ω 5% 0402
3E81	4822 117 13546	47Ω 5% 0402
3E82	4822 117 13546	47Ω 5% 0402
3E83	4822 117 13546	47Ω 5% 0402
3E84	4822 117 13546	47Ω 5% 0402
3E85	4822 117 13546	47Ω 5% 0402
3E86	4822 117 13546	47Ω 5% 0402
3E87	4822 117 13546	47Ω 5% 0402
3E88	4822 117 13546	47Ω 5% 0402
3E89	4822 117 13546	47Ω 5% 0402
3E91	3198 031 04730	47Ω 5% 0402
3E92	3198 031 04730	47Ω 5% 0402
3E93	3198 031 04730	47Ω 5% 0402
3I08	4822 117 13548	1kΩ 5% 0402
3I28	4822 117 13545	100Ω 1% 0402
3I29	4822 117 13545	100Ω 1% 0402
3I34	4822 117 13601	22kΩ 5% 0402
3I35	4822 051 30101	100Ω 5% 0.062W
3I36	4822 117 13601	22kΩ 5% 0402
3I37	4822 051 30101	100Ω 5% 0.062W
3I38	3198 031 08220	8.2kΩ 5% 0.5W
3I39	3198 031 02720	2.7kΩ 5% 0.01W 0402
3I40	4822 051 30759	75Ω 5% 0.062W

3I41	4822 117 13545	100Ω 1% 0402
3I42	4822 117 13601	22kΩ 5% 0402
3I43	4822 051 30101	100Ω 5% 0.062W
3I44	4822 117 13601	22kΩ 5% 0402
3I45	4822 051 30101	100Ω 5% 0.062W
3I46	3198 031 08220	8.2kΩ 5% 0.5W
3I47	3198 031 02720	2.7kΩ 5% 0.01W 0402
3I48	4822 051 30759	75Ω 5% 0.062W
3I49	4822 117 13545	100Ω 1% 0402
3I50	4822 051 30151	150Ω 5% 0.062W
3I51	4822 051 30101	100Ω 5% 0.062W
3I52	4822 051 30151	150Ω 5% 0.062W
3I53	4822 051 30101	100Ω 5% 0.062W
3I54	4822 117 13545	100Ω 1% 0402
3I55	4822 051 30759	75Ω 5% 0.062W
3I56	4822 117 13545	100Ω 1% 0402
3I57	4822 051 30759	75Ω 5% 0.062W
3I58	4822 117 13545	100Ω 1% 0402
3I59	4822 051 30759	75Ω 5% 0.062W
3I60	4822 051 30759	75Ω 5% 0.062W
3I61	4822 051 30101	100Ω 5% 0.062W
3I62	4822 051 30101	100Ω 5% 0.062W
3I63	3198 031 03920	3.9kΩ 5% 0402
3I64	3198 031 08220	8.2kΩ 5% 0.5W
3I65	4822 051 30101	100Ω 5% 0.062W
3I66	4822 051 30759	75Ω 5% 0.062W
3I67	4822 051 30759	75Ω 5% 0.062W
3I68	4822 117 13545	100Ω 1% 0402
3I69	4822 051 30151	150Ω 5% 0.062W
3I70	4822 051 30101	100Ω 5% 0.062W
3I71	4822 051 30151	150Ω 5% 0.062W
3I72	4822 051 30101	100Ω 5% 0.062W
3I73	4822 117 13605	Jumper 0402
3I74	4822 051 30151	150Ω 5% 0.062W
3I75	4822 117 13545	100Ω 1% 0402
3I76	4822 117 13545	100Ω 1% 0402
3I77	4822 051 30759	75Ω 5% 0.062W
3I78	4822 051 30759	75Ω 5% 0.062W
3I79	4822 051 30101	100Ω 5% 0.062W
3I80	4822 051 30101	100Ω 5% 0.062W
3I81	3198 031 08220	8.2kΩ 5% 0.5W
3I82	3198 031 03920	3.9kΩ 5% 0402
3I83	4822 117 13545	100Ω 1% 0402
3I84	4822 051 30759	75Ω 5% 0.062W
3I85	4822 117 13545	100Ω 1% 0402
3I86	4822 051 30759	75Ω 5% 0.062W
3I87	4822 117 13605	Jumper 0402
3I89	4822 051 30151	150Ω 5% 0.062W
3I90	4822 051 30101	100Ω 5% 0.062W
3I91	4822 051 30151	150Ω 5% 0.062W
3I92	4822 051 30101	100Ω 5% 0.062W
3I98	4822 117 11297	100kΩ 5% 0.1W
3IA1	4822 117 11297	100kΩ 5% 0.1W
3IA2	4822 051 30101	100Ω 5% 0.062W
3IA3	4822 117 13601	22kΩ 5% 0402
3IA4	4822 117 13548	1kΩ 5% 0402
3IA5	4822 117 13548	1kΩ 5% 0402
3IA6	4822 051 30102	1kΩ 5% 0.062W
3IA7	4822 051 30102	1kΩ 5% 0.062W
3IB1	4822 117 12925	47kΩ 1% 0.063W 0603
3IB2	4822 051 30101	100Ω 5% 0.062W
3IB4	4822 051 30223	22kΩ 5% 0.062W
3IB5	4822 051 30103	10kΩ 5% 0.062W
3IB9	4822 117 12925	47kΩ 1% 0.063W 0603
3IC1▲	4822 117 13574	1.5Ω 5% 1206
3IC2	4822 117 13601	22kΩ 5% 0402
3IC3	4822 117 13601	22kΩ 5% 0402
3IC4	4822 051 30101	100Ω 5% 0.062W
3IC6	4822 051 30101	100Ω 5% 0.062W
3ID0	3198 031 04720	4.7kΩ 5% 0402
3IE2	4822 051 30101	100Ω 5% 0.062W
3IE3	4822 051 30101	100Ω 5% 0.062W
3IE7	4822 051 30759	75Ω 5% 0.062W
3IE8	4822 051 30759	75Ω 5% 0.062W
3IE9	4822 117 13601	22kΩ 5% 0402
3IF0	4822 051 30759	75Ω 5% 0.062W
3IF5	4822 117 13601	22kΩ 5% 0402
3IF6	4822 051 30101	100Ω 5% 0.062W
3IF7	4822 051 30101	100Ω 5% 0.062W
3IH8	3198 031 04730	47Ω 5% 0402
3IH9	3198 031 04730	47Ω 5% 0402
3II0	4822 117 13606	10kΩ 5% 0.01W 0402
3II1	4822 117 13601	22kΩ 5% 0402
3II2	4822 117 13601	22kΩ 5% 0402
3II3	3198 031 04730	47Ω 5% 0402
3II4	3198 031 04730	47Ω 5% 0402
3IJ0	4822 117 13545	100Ω 1% 0402
3IJ1	4822 117 13545	100Ω 1% 0402
3IK2	4822 117 13601	22kΩ 5% 0402
3IK3	4822 117 13601	22kΩ 5% 0402
3IK7▲	4822 117 11152	4.7Ω 5%
3IL0	4822 117 13632	100kΩ 1% 0603 0.62W
3IL1	4822 117 11817	1.2kΩ 1% 0.0625W
3IL2	4822 051 30102	1kΩ 5% 0.062W
3IL3	4822 051 30109	10Ω 5% 0.062W
3IL4	4822 051 30393	39kΩ 5% 0.062W
3IL5	4822 051 30271	270Ω 5% 0.062W
3IL6	4822 051 30101	100Ω 5% 0.062W
3IL7	4822 117 13632	100kΩ 1% 0603 0.62W
3IL8	4822 051 30102	1kΩ 5% 0.062W
3IL9	4822 051 30102	1kΩ 5% 0.062W
3IM0	4822 051 30109	10Ω 5% 0.062W
3IM1	4822 051 30393	39kΩ 5% 0.062W
3IM2	4822 051 30561	560Ω 5% 0.062W
3IM3	4822 051 30561	560Ω 5% 0.062W
3IM4	4822 051 30152	1.5Ω 5% 0.062W
3IM5	4822 117 13632	100kΩ 1% 0603 0.62W
3IM6	4822 051 30102	1kΩ 5% 0.062W
3IM7	4822 051 30101	100Ω 5% 0.062W
3IM8	4822 051 30221	220Ω 5% 0.062W
3IM9	4822 051 30393	39kΩ 5% 0.062W
3IN0	4822 051 30109	10Ω 5% 0.062W
3IN4▲	2322 750 63908	3.9Ω 5% Fuse 1206
3IN5	4822 117 13601	22kΩ 5% 0402
3IN6	4822 117 13601	22kΩ 5% 0402
3IN7	4822 117 10361	680Ω 1% 0.1W
3IO5	4822 117 13606	10kΩ 5% 0.01W 0402
3IO6	4822 117 13606	10kΩ 5% 0.01W 0402
3IP0	5322 117 13056	8.2kΩ 1% 0.063W 0603
3IP1	4822 117 11817	1.2kΩ 1% 0.0625W
3IP2	4822 051 30221	220Ω 5% 0.062W
3IP3	4822 051 30151	150Ω 5% 0.062W
3IP4	4822 051 30221	220Ω 5% 0.062W
3IP5▲	4822 117 11748	Fuse 2.2Ω 5% 1206
3IP6	4822 051 30102	1kΩ 5% 0.062W
3IP7	4822 051 30272	2.7kΩ 5% 0.062W
3IQ0	4822 051 30109	10Ω 5% 0.062W
3IQ1	4822 117 10361	680Ω 1% 0.1W
3IS2	4822 051 30101	100Ω 5% 0.062W
3IS3	4822 051 30101	100Ω 5% 0.062W
3IS4	4822 051 30101	100Ω 5% 0.062W
3IS5	4822 051 30101	100Ω 5% 0.062W
3IS6	4822 051 30101	100Ω 5% 0.062W
3IT0	4822 117 12925	47kΩ 1% 0.063W 0603
3IT1	4822 117 12925	47kΩ 1% 0.063W 0603
3IT9	4822 117 12925	47kΩ 1% 0.063W 0603
3IU0	4822 117 13632	100kΩ 1% 0603 0.62W
3L03	4822 117 13545	100Ω 1% 0402
3L04	4822 117 13545	100Ω 1% 0402
3L05	4822 117 13545	100Ω 1% 0402
3L06	4822 117 13545	100Ω 1% 0402
3L07	4822 117 13606	10kΩ 5% 0.01W 0402
3L08	3198 031 02720	2.7kΩ 5% 0.01W 0402
3L11	4822 117 13545	100Ω 1% 0402
3L12	4822 117 13543	470Ω 5% 0402
3L17	4822 051 30471	47Ω 5% 0.062W
3L22	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L23	4822 051 30471	47Ω 5% 0.062W
3L24	2350 033 91002	4 x jumper
3L25	2350 033 91002	4 x jumper
3L26	2350 033 91002	4 x jumper
3L27	2350 033 91002	4 x jumper
3L28	4822 117 13543	470Ω 5% 0402
3L29	2350 033 91002	4 x jumper
3L30	2350 033 91002	4 x jumper
3L31	4822 051 20471	470Ω 5% 0.1W
3L32	4822 051 20471	470Ω 5% 0.1W
3P65	4822 117 13545	100Ω 1% 0402
3P66	4822 117 13545	100Ω 1% 0402
3P67	3198 031 04720	4.7kΩ 5% 0402
3P69	3198 031 04720	4.7kΩ 5% 0402
3S01	4822 051 30008	Jumper 0603
3S04	3198 031 03320	3.3kΩ 5% 0402
3S05	3198 031 05620	5.6kΩ 5% 0.01W 0402
3S06	4822 117 12925	47kΩ 1% 0.063W 0603
3S07	4822 117 12925	47kΩ 1% 0.063W 0603
3S08	4822 051 30221	220Ω 5% 0.062W
3S11	4822 117 13606	10kΩ 5% 0.01W 0402
3S12	3198 031 01830	18kΩ 5% 0.01W 0402
3S13	4822 117 13606	10kΩ 5% 0.01W 0402
3S14	4822 117 13606	10kΩ 5% 0.01W 0402
3S15	4822 117 13545	100Ω 1% 0402
3S16	4822 117 13545	100Ω 1% 0402
3S18	4822 117 13545	100Ω 1% 0402
3S19	4822 117 13545	100Ω 1% 0402
3S20	4822 117 13606	10kΩ 5% 0.01W 0402
3U01	4822 051 30102	1kΩ 5% 0.062W
3U02	4822 051 30102	1kΩ 5% 0.062W
3U03	4822 051 30333	33kΩ 5% 0.062W
3U04	4822 051 20121	120Ω 5% 0.1W
3U05	4822 051 30102	1kΩ 5% 0.062W
3U06	4822 051 30471	47Ω 5% 0.062W
3U07	9965 000 23109	22Ω 5% 0603
3U08	5322 117 13034	1.5kΩ 1% 0.063W 0603
3U09	4822 051 30562	5.6kΩ 5% 0.063W 0603
3U10	4822 051 30109	10Ω 5% 0.062W
3U11	4822 051 30121	120Ω 5% 0.062W
3U12	4822 051 30223	22kΩ 5% 0.062W
3U13	4822 051 30103	10kΩ 5% 0.062W
3U14	4822 051 30102	1kΩ 5% 0.062W
3U15	5322 117 13042	3.9kΩ 1% 0.063W 0603
3U16	4822 051 30479	47Ω 5% 0.062W
3U17	4822 051 30109	10Ω 5% 0.062W
3U18	2322 704 61002	1kΩ 1%
3U19	4822 051 30472	4.7Ω 5% 0.062W
3U20	2322 704 61002	1kΩ 1%
3U21	4822 117 12925	47kΩ 1% 0.063W 0603
3U22	4822 051 30271	270Ω 5% 0.062W
3U23	4822 051 30121	120Ω 5% 0.062W
3U24	4822 051 30223	22kΩ 5% 0.062W
3U25	4822 051 30474	470kΩ 5% 0.062W
3U26	4822 051 30223	22kΩ 5% 0.062W
3U27	4822 051 30223	22kΩ 5% 0.062W
3U28	4822 117 12925	47kΩ 1% 0.063W 0603
3U29	4822 051 30109	10Ω 5% 0.062W
3U30	4822 051 20121	120Ω 5% 0.1W
3U31	4822 051 20121	120Ω 5% 0.1W
3U32	4822 051 30183	18kΩ 5% 0.062W
3U33	4822 051 30103	10kΩ 5% 0.062W
3U34	4822 051 30474	470kΩ 5% 0.062W
3U35	4822 051 30103	10kΩ 5% 0.062W
3U36	4822 051 30222	2.2kΩ 5% 0.062W
3U37	4822 051 30223	22kΩ 5% 0.062W
3U38	4822 051 30222	2.2kΩ 5% 0.062W
3U39	4822 051 30223	22kΩ 5% 0.062W
3U40	4822 051 30154	150kΩ 5% 0.062W
3U41	4822 051 30102	1kΩ 5% 0.062W
3U42	4822 051 30103	10kΩ 5% 0.062W
3U43	4822 051 30223	22kΩ 5% 0.062W
3U44	4822 051 30105	1MΩ 5% 0.062W
3U45	4822 051 30105	1MΩ 5% 0.062W
3U46	4822 117 12925	47kΩ 1% 0.063W 0603
3U51	9965 000 23109	22Ω 5% 0603
3U52	4822 051 30102	1kΩ 5% 0.062W
3U53	4822 051 30183	18kΩ 5% 0.062W
3U54	4822 051 30101	100Ω 5% 0.062W
3U55	4822 051 30102	1kΩ 5% 0.062W
3V03	4822 117 13546	47Ω 5% 0402
3V04	4822 117 13546	47Ω 5% 0402
3V05	4822 117 13546	47Ω 5% 0402
3V06	4822 117 13545	100Ω 1% 0402
3V07	3198 031 04720	4.7kΩ 5% 0402
3V08	4822 117 13548	1kΩ 5% 0402
3V09	4822 117 13545	100Ω 1% 0402
3V10	4822 117 13545	100Ω 1% 0402
3V11	4822 117 13545	100Ω 1% 0402
3V12	4822 117 13545	100Ω 1% 0402
3V13	3198 031 04720	4.7kΩ 5% 0402
3V14	4822 117 13546	47Ω 5% 0402
3V15	4822 117 13546	47Ω 5% 0402
3V16	4822 117 13546	47Ω 5% 0402
3V17	3198 031 04720	4.7kΩ 5% 0402
3Y00	3198 031 01530	15kΩ 5% 0.01W 0402
3Y01	3198 031 03320	3.3kΩ 5% 0402
3Y02	4822 117 13606	10kΩ 5% 0.01W 0402
3Y03▲	4822 117 11151	1Ω 5%
3Y04▲	4822 117 11151	1Ω 5%
3Y05	4822 117 13606	10kΩ 5% 0.01W 0402
3Y06	4822 117 13545	100Ω 1% 0402
3Y07	4822 117 13546	47Ω 5% 0402
9001	4822 051 30008	Jumper 0603
9002	4822 051 30008	Jumper 0603
9010	4822 051 30008	Jumper 0603
9011	4822 051 30008	Jumper 0603
9012	4822 051 30008	Jumper 0603
9013	4822 051 30008	Jumper 0603
9016	4822 051 30008	Jumper 0603
9019	4822 051 30008	Jumper 0603
9020	4822 051 30008	Jumper 0603
9318	4822 051 30008	Jumper 0603
9322	4822 051 30101	100Ω 5% 0.062W
9406	4822 051 30008	Jumper 0603
9410	4822 051 30008	Jumper 0603
9413	4822 051 30008	Jumper 0603
9416	4822 051 30008	Jumper 0603
9417	4822 051 30008	Jumper 0603
9418	4822 051 30008	Jumper 0603
9419	4822 051 30008	Jumper 0603
9420	4822 051 30008	Jumper 0603
9702	4822 051 30008	Jumper 0603
9703	4822 051 30008	Jumper 0603
9708	4822 051 30008	Jumper 0603
9712	4822 051 30008	Jumper 0603
9714	4822 051 30008	Jumper 0603
9716	4822 051 30008	Jumper 0603
9717	4822 051 30008	Jumper 0603
9721	4822 051 30008	Jumper 0603
9723	4822 051 30008	Jumper 0603
9725	4822 051 30008	Jumper 0603
9727	4822 051 30008	Jumper 0603
9728	4822 051 30008	Jumper 0603
9729	4822 051 30008	Jumper 0603

9744	4822 051 30008	Jumper 0603
9747	4822 051 30008	Jumper 0603
9760	4822 051 30008	Jumper 0603
9761	4822 051 30008	Jumper 0603
9762	4822 051 30008	Jumper 0603
9763	4822 051 30008	Jumper 0603
9764	4822 051 30008	Jumper 0603
9765	4822 051 30008	Jumper 0603
9766	4822 051 30008	Jumper 0603
9772	4822 051 30008	Jumper 0603
9A00	4822 117 13605	Jumper 0402
9A01	4822 117 13605	Jumper 0402
9A04	4822 117 13605	Jumper 0402
9A05	4822 117 13605	Jumper 0402
9A06	4822 117 13605	Jumper 0402
9A09	4822 051 20008	Jumper 0805
9C02	4822 051 30008	Jumper 0603
9D49	4822 117 13605	Jumper 0402
9D55	4822 051 30008	Jumper 0603
9E54	4822 117 13605	Jumper 0402
9I00	4822 117 13605	Jumper 0402
9I02	4822 117 13605	Jumper 0402
9I05	4822 051 30008	Jumper 0603
9I06	4822 051 30008	Jumper 0603
9I13	4822 051 30008	Jumper 0603
9I25	4822 117 13605	Jumper 0402
9I26	4822 117 13605	Jumper 0402
9I27	4822 117 13605	Jumper 0402
9I32	4822 117 13605	Jumper 0402
9I33	4822 117 13605	Jumper 0402
9I34	4822 117 13605	Jumper 0402
9I35	4822 117 13605	Jumper 0402
9I36	4822 117 13605	Jumper 0402
9I37	4822 117 13605	Jumper 0402
9I39	4822 117 13605	Jumper 0402
9I41	4822 117 13605	Jumper 0402
9I48	4822 117 13605	Jumper 0402
9I49	4822 117 13605	Jumper 0402
9I77	4822 117 13605	Jumper 0402
9I79	4822 117 13605	Jumper 0402
9I81	4822 117 13605	Jumper 0402
9I82	4822 117 13605	Jumper 0402
9I85	4822 117 13605	Jumper 0402
9I87	4822 117 13605	Jumper 0402
9I89	4822 117 13605	Jumper 0402
9IA3	4822 117 13605	Jumper 0402
9IA4	4822 117 13605	Jumper 0402
9IA5	4822 117 13605	Jumper 0402
9IA6	4822 117 13605	Jumper 0402
9IA7	4822 117 13605	Jumper 0402
9IA8	4822 117 13605	Jumper 0402
9IB0	4822 117 13605	Jumper 0402
9IC1	4822 117 13605	Jumper 0402
9IC2	4822 117 13605	Jumper 0402
9IC3	4822 117 13605	Jumper 0402
9IC8	4822 117 13605	Jumper 0402
9IC9	4822 117 13605	Jumper 0402
9L04	4822 051 30008	Jumper 0603
9P69	4822 117 13605	Jumper 0402
9P70	4822 117 13605	Jumper 0402
9P71	4822 117 13605	Jumper 0402
9S01	4822 051 30008	Jumper 0603
9S02	4822 051 30008	Jumper 0603
9S03	4822 051 30008	Jumper 0603
9S04	4822 051 30008	Jumper 0603
9S05	4822 051 30008	Jumper 0603
9S06	4822 051 30008	Jumper 0603
9S07	4822 051 30008	Jumper 0603
9S08	4822 051 30008	Jumper 0603
9S09	4822 051 30008	Jumper 0603
9S11	4822 051 30008	Jumper 0603
9S12	4822 051 30008	Jumper 0603
9S13	4822 051 30008	Jumper 0603
9S14	4822 051 30008	Jumper 0603
9S15	4822 051 30008	Jumper 0603
9S16	4822 051 30008	Jumper 0603
9S17	4822 051 30008	Jumper 0603
9S18	4822 051 30008	Jumper 0603
9S19	4822 051 30008	Jumper 0603
9S20	4822 051 30008	Jumper 0603
9S21	4822 051 30008	Jumper 0603
9S22	4822 051 30008	Jumper 0603
9S23	4822 051 30008	Jumper 0603
9S24	5322 117 13049	470Ω 1% 0.063W 0603
9S25	4822 051 30008	Jumper 0603
9S26	4822 051 30008	Jumper 0603
9S27	4822 051 30008	Jumper 0603
9S28	4822 051 30008	Jumper 0603
9S29	4822 051 30008	Jumper 0603
9S30	4822 051 30008	Jumper 0603
9S31	4822 051 30008	Jumper 0603
9S32	4822 051 30008	Jumper 0603
9S33	4822 051 30008	Jumper 0603
9S34	4822 051 30008	Jumper 0603
9S36	4822 051 30008	Jumper 0603
9S37	4822 051 30008	Jumper 0603
9S38	4822 051 30008	Jumper 0603
9S65	4822 051 30008	Jumper 0603
9T01	4822 051 30223	22kΩ 5% 0.062W
9T04	4822 051 30008	Jumper 0603
9T07	4822 051 30008	Jumper 0603
9T08	4822 051 30008	Jumper 0603
9T11	4822 051 30008	Jumper 0603
9T12	4822 051 30008	Jumper 0603
9T13	4822 051 30008	Jumper 0603
9T14	4822 051 20008	Jumper 0805
9T15	4822 051 30008	Jumper 0603

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5401	3198 018 56880	6.8µH 10% 0603
5403	2422 549 00195	Bead 40.4MHz
5404	2422 535 95427	Bead 120Ω at 100MHz
5405	2422 535 95427	Bead 120Ω at 100MHz
5406	3198 018 52280	2.2µF 10% 1008
5408	2422 549 44983	Trimmer 78MHz 5CCB
5411	3198 018 32770	0.27µH 10% 0805
5415	4822 157 11716	Bead 30Ω at 100MHz
5416	4822 157 11716	Bead 30Ω at 100MHz
5700	4822 157 11716	Bead 30Ω at 100MHz
5701	4822 157 11716	Bead 30Ω at 100MHz
5702	4822 157 11716	Bead 30Ω at 100MHz
5703	4822 157 71206	Bead 600Ω 100MHz
5706	4822 157 11716	Bead 30Ω at 100MHz
5707	4822 157 11716	Bead 30Ω at 100MHz
5710	4822 157 11716	Bead 30Ω at 100MHz
5711	4822 157 11716	Bead 30Ω at 100MHz
5712	4822 156 21729	Bead 1kΩ 100MHz 0805
5713	4822 157 11716	Bead 30Ω at 100MHz
5714	4822 157 71206	Bead 600Ω 100MHz
5715	4822 157 11716	Bead 30Ω at 100MHz
5716	4822 156 21729	Bead 1kΩ 100MHz 0805
5717	4822 156 21729	Bead 1kΩ 100MHz 0805
5718	4822 157 11716	Bead 30Ω at 100MHz
5719	4822 156 21729	Bead 1kΩ 100MHz 0805
5720	4822 157 11876	6.8µH 10% 0805
5721	4822 157 11716	Bead 30Ω at 100MHz
5722	4822 157 11716	Bead 30Ω at 100MHz
5724	4822 156 21729	Bead 1kΩ 100MHz 0805
5725	4822 157 11716	Bead 30Ω at 100MHz
5726	4822 156 21729	Bead 1kΩ 100MHz 0805
5727	4822 156 21729	Bead 1kΩ 100MHz 0805
5728	4822 157 11716	Bead 30Ω at 100MHz
5729	4822 157 11716	Bead 30Ω at 100MHz
5731	4822 156 21729	Bead 1kΩ 100MHz 0805
5736	4822 157 11876	6.8µH 10% 0805
5737	4822 156 21729	Bead 1kΩ 100MHz 0805
5742	4822 157 11716	Bead 30Ω at 100MHz
5743	4822 157 11716	Bead 30Ω at 100MHz
5744	4822 157 11716	Bead 30Ω at 100MHz
5746	4822 157 11716	Bead 30Ω at 100MHz
5747	4822 157 11716	Bead 30Ω at 100MHz
5748	4822 157 11716	Bead 30Ω at 100MHz
5750	4822 157 11716	Bead 30Ω at 100MHz
5751	4822 157 11716	Bead 30Ω at 100MHz
5752	4822 157 11716	Bead 30Ω at 100MHz
5753	4822 157 11716	Bead 30Ω at 100MHz
5754	4822 157 11716	Bead 30Ω at 100MHz
5755	4822 157 11716	Bead 30Ω at 100MHz
5756	4822 157 11716	Bead 30Ω at 100MHz
5757	4822 157 11716	Bead 30Ω at 100MHz
5A00	4822 157 11716	Bead 30Ω at 100MHz
5A01	4822 157 11716	Bead 30Ω at 100MHz
5A03	4822 157 11716	Bead 30Ω at 100MHz
5A06	4822 157 11716	Bead 30Ω at 100MHz
5A17	2422 549 43769	Bead 30Ω at 100MHz
5A18	2422 549 43769	Bead 30Ω at 100MHz
5A19	4822 157 11828	22µH 20% 0805
5A20	2322 734 63309	33Ω 1% 0.1W 0805
5A21	2322 734 63309	33Ω 1% 0.1W 0805
5D51	4822 157 11716	Bead 30Ω at 100MHz
5D52	4822 157 11716	Bead 30Ω at 100MHz
5D54	4822 157 11716	Bead 30Ω at 100MHz
5D56	4822 156 21729	Bead 1kΩ 100MHz 0805
5E00	2422 549 42896	Bead 120Ω 100MHz
5E01	2422 549 42896	Bead 120Ω 100MHz
5E02	2422 549 42896	Bead 120Ω 100MHz
5E03	2422 549 42896	Bead 120Ω 100MHz
5E04	2422 549 42896	Bead 120Ω 100MHz
5E05	2422 549 42896	Bead 120Ω 100MHz
5E08	4822 157 11716	Bead 30Ω at 100MHz
5E50	2422 549 43062	Bead 600Ω at 100MHz
5E51	2422 549 43062	Bead 600Ω at 100MHz
5E53	2422 535 94134	10µH 20% 0805
5E56	2422 549 43062	Bead 600Ω at 100MHz
5E57	2422 549 43062	Bead 600Ω at 100MHz
5E58	2422 549 43062	Bead 600Ω at 100MHz
5L02	3198 018 51080	1µH 10% 0603
5L04	3198 018 54770	0.47µF 10% 0603
5L06	3198 018 51080	1µH 10% 0603
5L07	4822 157 11716	Bead 30Ω at 100MHz
5L08	4822 157 11716	Bead 30Ω at 100MHz
5L09	4822 157 11716	Bead 30Ω at 100MHz
5L10	4822 157 11716	Bead 30Ω at 100MHz
5L11	4822 157 11716	Bead 30Ω at 100MHz
5L12	4822 157 11716	Bead 30Ω at 100MHz
5L13	4822 156 21729	Bead 1kΩ 100MHz 0805
5L14	4822 156 21729	Bead 1kΩ 100MHz 0805
5L15	4822 156 21729	Bead 1kΩ 100MHz 0805
5L16	4822 051 20008	Jumper 0805
5L17	4822 051 20008	Jumper 0805
5L18	4822 051 20008	Jumper 0805
5L21	4822 117 10353	150Ω 1% 0.1W
5P51	4822 157 11716	Bead 30Ω at 100MHz
5S01	4822 157 11716	Bead 30Ω at 100MHz
5S02	4822 157 11716	Bead 30Ω at 100MHz
5S03	4822 157 11716	Bead 30Ω at 100MHz
5S04	4822 157 11716	Bead 30Ω at 100MHz
5S05	4822 157 11716	Bead 30Ω at 100MHz
5S06	4822 051 30008	Jumper 0603
5S07	4822 051 30008	Jumper 0603
5S08	4822 051 30008	Jumper 0603
5T02	2422 535 94134	10µH 20% 0805
5U01	3104 308 20661	Transf. BD13118-02
5U02	2422 535 94134	10µH 20% 0805
5U03	4822 157 11716	Bead 30Ω at 100MHz
5U04	4822 157 11716	Bead 30Ω at 100MHz
5U05	2422 535 94134	10µH 20% 0805
5U06	2422 535 94134	10µH 20% 0805
5V06	3198 018 90050	Bead 1kΩ at 100MHz
5V07	3198 018 90050	Bead 1kΩ at 100MHz
5V08	3198 018 90050	Bead 1kΩ at 100MHz
5Y01	2422 549 45325	Bead 67Ω at 100MHz
5Y02	2422 549 45325	Bead 67Ω at 100MHz
5Y03	2422 549 45325	Bead 67Ω at 100MHz
5Y04	2422 549 45325	Bead 67Ω at 100MHz
5Y05	2422 549 45325	Bead 67Ω at 100MHz

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6001	4822 130 80622	BAT54
6002	4822 130 11397	BAS316
6003	4822 130 80622	BAT54
6004	4822 130 80622	BAT54
6005	4822 130 11422	PLVA2650A
6403	9340 552 30115	BA591
6830	4822 130 11397	BAS316
6831	4822 130 11397	BAS316
6832	4822 130 11397	BAS316
6833	4822 130 11397	BAS316
6834	4822 130 11397	BAS316
6835	4822 130 11397	BAS316
6836	4822 130 11397	BAS316
6837	4822 130 11397	BAS316
6838	4822 130 11397	BAS316
6839	4822 130 11397	BAS316
6840	4822 130 11397	BAS316
6841	4822 130 11397	BAS316
6842	4822 130 11397	BAS316
6843	4822 130 11397	BAS316
6844	4822 130 11397	BAS316
6845	4822 130 11397	BAS316
6846	4822 130 11397	BAS316
6847	4822 130 11397	BAS316
6A00	4822 130 11551	UDZS10B
6A01	4822 130 10838	UDZ3.3B
6A02	4822 130 11397	BAS316
6D53	9340 553 52115	BAS321
6D54	9340 553 52115	BAS321
6D55	9340 553 52115	BAS321
6D56	9340 553 52115	BAS321
6D57	4822 130 11423	PLVA2656A
6D58	4822 130 11423	PLVA2656A
6D59	4822 130 11423	PLVA2656A
6D60	4822 130 11423	PLVA2656A
6D61	4822 130 11423	PLVA2656A
6D62	4822 130 11564	UDZ3.9B
6D63	4822 130 11397	BAS316
6D64	4822 130 11397	BAS316
6E54	4822 130 11397	BAS316
6E55	4822 130 11397	BAS316
6I10	4822 130 11416	PDZ6.8B
6I11	4822 130 11416	PDZ6.8B
6I12	4822 130 11416	PDZ6.8B
6I13	4822 130 11416	PDZ6.8B
6I14	9322 129 41685	BZM55-C12
6I15	4822 130 11416	PDZ6.8B
6I16	4822 130 11416	PDZ6.8B
6I17	4822 130 11416	PDZ6.8B
6I18	4822 130 11416	PDZ6.8B

6I19	4822 130 11416	PDZ6.8B
6I20	9322 129 41685	BZM55-C12
6I21	4822 130 11416	PDZ6.8B
6I22	4822 130 11416	PDZ6.8B
6I23	4822 130 11416	PDZ6.8B
6I24	4822 130 11416	PDZ6.8B
6I25	4822 130 11416	PDZ6.8B
6I26	4822 130 11416	PDZ6.8B
6I27	4822 130 11416	PDZ6.8B
6I28	4822 130 11416	PDZ6.8B
6I29	4822 130 11416	PDZ6.8B
6I30	4822 130 11416	PDZ6.8B
6I31	4822 130 11416	PDZ6.8B
6I32	4822 130 11416	PDZ6.8B
6I33	4822 130 11416	PDZ6.8B
6I34	4822 130 11416	PDZ6.8B
6I35	4822 130 11416	PDZ6.8B
6I36	4822 130 11416	PDZ6.8B
6I37	4822 130 11416	PDZ6.8B
6I38	4822 130 11416	PDZ6.8B
6I39	4822 130 11416	PDZ6.8B
6I40	4822 130 11416	PDZ6.8B
6I41	4822 130 11416	PDZ6.8B
6I42	4822 130 11416	PDZ6.8B
6I43	4822 130 11416	PDZ6.8B
6I44	4822 130 11416	PDZ6.8B
6I45	4822 130 11416	PDZ6.8B
6I46	4822 130 11416	PDZ6.8B
6I47	4822 130 11416	PDZ6.8B
6I48	4822 130 11416	PDZ6.8B
6I49	9322 129 41685	BZM55-C12
6I50	4822 130 11416	PDZ6.8B
6I51	4822 130 11416	PDZ6.8B
6I52	4822 130 11416	PDZ6.8B
6I53	4822 130 11416	PDZ6.8B
6I54	4822 130 11416	PDZ6.8B
6I55	4822 130 11416	PDZ6.8B
6I56	4822 130 11416	PDZ6.8B
6I69	4822 130 11416	PDZ6.8B
6I70	4822 130 11416	PDZ6.8B
6I90	4822 130 11416	PDZ6.8B
6I91	4822 130 11416	PDZ6.8B
6I92	4822 130 11416	PDZ6.8B
6I93	4822 130 11416	PDZ6.8B
6I94	4822 130 11416	PDZ6.8B
6I95	4822 130 11416	PDZ6.8B
6I96	4822 130 11416	PDZ6.8B
6I97	4822 130 11416	PDZ6.8B
6I98	4822 130 11416	PDZ6.8B
6I99	4822 130 11416	PDZ6.8B
6IA0	9322 129 41685	BZM55-C12
6IA6	4822 130 11397	BAS316
6IA7	4822 130 11397	BAS316
6T01	4822 130 11397	BAS316
6T03	4822 130 11397	BAS316
6T08	9340 548 71115	PDZ33B
6U01	4822 130 11397	BAS316
6U03	4822 130 11397	BAS316
6U04	4822 130 11397	BAS316
6U05	9322 129 41685	BZM55-C12
6U06	9322 184 73668	1SMA5915B
6U07	4822 130 11416	PDZ6.8B
6U08	4822 130 80622	BAT54
6U09	4822 130 80622	BAT54
6U10	4822 130 11522	UDZ15B
6U11	4822 130 11397	BAS316
6U12	9340 548 52115	PDZ5.1B
6U13	9340 548 58115	PDZ9.1B
6U14	4822 130 11397	BAS316
6U15	4822 130 11397	BAS316
6V01	4822 130 11397	BAS316
6V02	4822 130 11397	BAS316
6V03	4822 130 11397	BAS316
6Y00	9322 129 41685	BZM55-C12

7001	9352 684 81557	SAA5801H/015
7002	3198 010 42320	BC857BW
7003	3198 010 42310	BC847BW
7004	3198 010 42310	BC847BW
7005	9322 172 45668	LF33ABDT
7007	9322 157 20668	MSM51V18165F-60J
7008	3198 010 42310	BC847BW
7009	3198 010 42310	BC847BW
7010	3198 010 42320	BC857BW
7011	9322 206 23668	M24C32-WMN6P
7012	9322 199 93668	M29W400DT-55N6
7013	3198 010 42310	BC847BW
7014	3198 010 42320	BC857BW
7017	4822 130 10255	MUN2213
7018	9352 115 40118	74LVC245APW
7019	9352 115 40118	74LVC245APW
7020	3198 010 42310	BC847BW
7066	3104 317 06211	Software FTL13EU_1.C_06211
7067	3104 317 04831	Softw. (check Prod.Surv.)
7070	3104 317 05511	Software R_CYCLONE_30LCD_E_01
7307	9352 630 99118	TDA9181T
7320	3198 010 42310	BC847BW
7322	3198 010 42310	BC847BW
7323	9352 625 24518	TDA9321H/N2
7402	3198 010 42310	BC847BW
7403	5322 130 60159	BC846B
7407	4822 130 60373	BC856B
7410	3198 010 42310	BC847BW
7411	5322 130 60159	BC846B
7414	3198 010 42310	BC847BW
7415	3198 010 42310	BC847BW
7706	9322 142 88668	LF25CDT
7707	5322 130 60159	BC846B
7708	5322 130 60159	BC846B
7709	5322 130 60159	BC846B
7710	5322 130 60159	BC846B
7711	2422 486 80938	Socket 32p f PLCC
7712	9351 870 00118	74HC573PW
7713	9352 688 09557	SAA4978H/V204
7714	9965 000 02179	MS81V04160-25TB
7715	4822 209 73852	PMBT2369
7717	9322 183 81668	MSM54V12222B-25JS
7718	9352 695 58557	SAA4993H/V1
7719	9322 183 81668	MSM54V12222B-25JS
7722	9965 000 02179	MS81V04160-25TB
7723	9965 000 02179	MS81V04160-25TB
7724	9322 188 08702	T8F24EF-0002
7725	4822 209 73852	PMBT2369
7727	9322 170 14668	LF15ABDT
7740	9352 687 20125	74LVC1G125GW
7741	9352 687 20125	74LVC1G125GW
7742	9352 115 40118	74LVC245APW
7743	9352 115 40118	74LVC245APW
7744	9352 115 40118	74LVC245APW
7745	9352 115 40118	74LVC245APW
7746	9322 190 24668	CY2302SC-1
7747	9352 687 21165	74LVC1G126GW
7748	9352 687 20125	74LVC1G125GW
7999	3104 317 45521	Softw. (check Prod.Surv.)
7A00	4822 209 30095	LM833D
7A01	3198 010 42310	BC847BW
7A02	9322 196 03702	MSP3411G-QI-B8V3
7A03	4822 209 30095	LM833D
7A07	9322 183 05668	TS482ID
7A08	4822 130 60373	BC856B
7A09	4822 130 60373	BC856B
7A10	9340 425 20115	BC847BS
7D51	4822 209 16095	BA7657F
7D52	4822 130 62755	BF570
7D53	4822 130 62755	BF570
7D54	4822 130 62755	BF570
7D55	4822 130 62755	BF570
7D57	9322 131 22668	TSH95D
7D59	9322 145 26668	M24C02-WMN6
7E05	9322 170 14668	LF15ABDT
7E08	3198 010 42320	BC857BW
7E09	9322 195 65668	AD9066JR
7E10	9352 686 35118	PCA9515DP
7E12	9340 425 20115	BC847BS
7E13	3198 010 42320	BC857BW
7E14	3198 010 42310	BC847BW
7E16	9322 195 65668	AD9066JR
7E17	3198 010 42320	BC857BW
7E18	9322 146 75685	TS431L
7E19	3198 010 42310	BC847BW
7E20	3198 010 42320	BC857BW
7E21	3198 010 42310	BC847BW
7E22	3198 010 42310	BC847BW
7E23	3198 010 42320	BC857BW
7E24	9322 146 75685	TS431L
7I01	9340 425 20115	BC847BS
7I02	9340 425 20115	BC847BS
7I05	3198 010 42320	BC857BW
7I07	4822 130 60142	BC869
7I09	3198 010 42310	BC847BW
7I17	9322 116 87668	TEA6422D
7I20	9351 869 40118	74HC4053PW
7I22	9340 425 20115	BC847BS
7I26	4822 130 60373	BC856B
7I27	5322 130 60159	BC846B
7I28	4822 130 60373	BC856B
7I29	5322 130 60159	BC846B
7I30	5322 130 60159	BC846B
7I31	4822 130 60373	BC856B
7I32	9351 869 40118	74HC4053PW
7I35	3198 010 42310	BC847BW
7I36	3198 010 42310	BC847BW
7I37	3198 010 42320	BC857BW
7I38	3198 010 42320	BC857BW
7I44	9340 425 20115	BC847BS
7L01	9322 181 72671	AD9883AKST-110
7L02	4822 209 17398	LD1117DT33
7L03	4822 209 73852	PMBT2369
7P56	4822 209 17345	M62320FP
7S01	4822 130 10255	MUN2213
7S02	4822 130 10255	MUN2213
7S03	9340 425 20115	BC847BS
7S04	4822 130 10255	MUN2213
7U01	4822 130 60373	BC856B
7U02	4822 130 60373	BC856B
7U03	9322 091 04668	SI4410DY
7U04	9322 091 04668	SI4410DY
7U05	4822 130 60373	BC856B
7U06	9340 425 20115	BC847BS
7U07	3198 010 42320	BC857BW
7U08	4822 130 42804	BC817-25
7U09	4822 130 42804	BC817-25
7U10	5322 130 60159	BC846B
7U11	5322 130 60159	BC846B
7U12	5322 130 60159	BC846B
7U13	3198 010 42310	BC847BW
7V01	9322 196 44671	EP1C6Q240C8
7V02	9322 159 45668	DS90C385MTD
7Y00	9322 181 15668	IRFR9024N
7Y01	3198 010 42310	BC847BW

LED + Switch Panel [LD]

Various

0317	2422 025 12482	Connector 6p m
0317	2422 025 13369	Socket 6p (Telephone)
0320	2422 025 16545	Connector 10p m
1101	2422 128 02927	Switch push 2p

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2107	4822 124 12095	100μF 20% 16V
2108	3198 017 31040	100nF 20% 50V 0603
2120	2020 024 90166	10μF 20% 35V
2126	2020 552 96326	220nF 10% 16V

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3101	4822 051 30151	150Ω 5% 0.062W
3102	4822 117 13632	100kΩ 1% 0.62W 0603
3103	4822 051 30221	220Ω 5% 0.062W
3104	4822 117 13632	100kΩ 1% 0.62W 0603
3105	4822 051 30331	330Ω 5% 0.062W
3106	4822 051 30151	150Ω 5% 0.062W
3107	4822 051 30471	470Ω 5% 0.062W
3108	4822 051 30103	10kΩ 5% 0.062W
3109	4822 051 30101	100Ω 5% 0.062W
3110	3198 021 35620	5.6kΩ 5% 0.062W 0603
3111	3198 021 35620	5.6kΩ 5% 0.062W 0603
3112	3198 021 35620	5.6kΩ 5% 0.062W 0603
3120	4822 051 30472	4.7kΩ 5% 0.062W
3121	3198 021 31030	10kΩ 5% 0.062W 0603
3121	4822 051 30472	4.7kΩ 5% 0.062W
3122	4822 051 30102	1kΩ 5% 0.062W
3123	4822 051 30103	10kΩ 5% 0.062W
3124	4822 051 30102	1kΩ 5% 0.062W
3125	4822 051 30332	3.3kΩ 5% 0.062W
3126	4822 051 30474	470kΩ 5% 0.062W
3127	4822 051 30474	470kΩ 5% 0.062W
3128	3198 021 31020	1kΩ 5% 0.062W 0603
3129	3198 021 35620	5.6kΩ 5% 0.062W 0603
3130	3198 021 33920	3.9kΩ 5% 0.062W 0603
3131	3198 021 31030	10kΩ 5% 0.062W 0603
4101	4822 051 30008	Jumper 0603
4107	4822 051 30008	Jumper 0603

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5100	2422 549 43769	Bead 30Ω at 100MHz

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6101	3198 020 53980	BZX384-C2V9
6101	4822 130 11564	UDZ3.9B
6102	3198 020 55180	BZX384-C5V1
6103	4822 130 83915	TLMV3100
6105	3198 020 53980	BZX384-C2V9
6105	4822 130 11564	UDZ3.9B
6127	9322 140 63685	TEMD5000
6128	3198 020 56880	BZX384-C6V8
6129	3198 020 56880	BZX384-C6V8

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7103	3198 010 42320	BC857BW
7103	5322 130 42756	BC857C
7104	3198 010 42310	BC847BW
7105	3198 010 42320	BC857BW
7105	5322 130 42756	BC857C
7107	9322 155 98667	TSOP2236YA1
7107	9322 178 03667	TSOP2136YA1
7108	9352 688 24125	74LVC1G86GW
7120	5322 209 82941	LM358D
7120	9339 848 80668	LM358DT

Side I/O Panel [O]

Various

0206	3104 308 10671	Side I/O bracket LCD 30"
0206	3104 308 11401	Side I/O bracket(ITV)
0900	2422 026 05133	Connector SVHS 4p f
0901	4822 267 10975	Connector 3p
0902	4822 267 31014	Socket headphone
0936	2422 025 12485	Connector 11p m
1900	2422 026 05133	Connector SVHS 4p f
1901	2422 026 04756	Socket CINCH 3p
1901	4822 267 10975	Connector 3p
1902	2422 025 18016	Socket JACK 6p m
1902	4822 267 31014	Socket headphone
1903	2422 025 12482	Connector 6p m
1904	2422 128 03106	Switch 2p 30V
1936	2422 025 12485	Connector 11p m
8936	3104 311 06121	Cable 11p560/11p

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2903	5322 122 32531	100pF 5% 50V
2904	5322 122 32531	100pF 5% 50V
2905	4822 122 33177	10nF 20% 50V
2906	4822 122 33177	10nF 20% 50V

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3901	4822 117 11373	100Ω 1% 0805
3902	4822 116 52201	75Ω 5% 0.5W
3903	4822 117 11373	100Ω 1% 0805
3904	4822 116 52201	75Ω 5% 0.5W
3905	4822 050 11002	1kΩ 1% 0.4W
3906	4822 050 11002	1kΩ 1% 0.4W
3908	4822 050 11002	1kΩ 1% 0.4W
3910	4822 116 52276	3.9kΩ 5% 0.5W
3911	4822 050 21003	10kΩ 1% 0.6W
3912	4822 050 21003	10kΩ 1% 0.6W
4901	4822 051 20008	Jumper 0805
4903	4822 051 20008	Jumper 0805

Top Control Panel [P]

Various

0053	3104 308 10551	TC assy knob R LCD 30"
0055	3104 308 10561	TC assy knob L LCD 30"
0057	3104 304 25831	TC frame LCD 30"
0058	3104 308 10571	TC assy knob M LCD 30"
0345	4822 267 10459	Connector 3p
1701	2422 128 02778	Tact switch
1702	2422 128 02778	Tact switch
1703	2422 128 02778	Tact switch
1704	2422 128 02778	Tact switch
1705	2422 128 02778	Tact switch
8345	3104 311 00121	Cable 3p/280/3p KR Wh

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3001	4822 051 20391	390Ω 5% 0.1W
3003	4822 117 13528	200Ω 1% 0.125W 0805
3005	4822 117 11951	2kΩ 1% 0.1W
3009	4822 117 11534	1.1kΩ 1% 0.1W
3011	4822 117 10845	620Ω 1% 0.1W
3999	4822 051 20471	470Ω 5% 0.1W
9001	4822 051 20008	Jumper 0805
9003	4822 051 20008	Jumper 0805
9005	4822 051 20008	Jumper 0805
9006	4822 051 20008	Jumper 0805

Aux Supply [SA]

Various

0202	3104 301 24181	Spring for Bracket
0203	3104 301 24181	Spring for Bracket
0205	3122 121 67191	Clip small
0206	3122 121 67191	Clip small
0207	3122 121 67191	Clip small
0208	3122 121 67191	Clip small
0209	3122 121 67191	Clip small
0210	3104 304 90361	Insulating plate
1005	4822 071 55002	Fuse T5A 250V
1006	4822 071 55002	Fuse T5A 250V
1007	4822 071 55002	Fuse T5A 250V
1302	2422 025 10769	Connector 9p m
1309	2422 025 16374	Connector 2p m
1312	2422 025 18166	Connector 16p m
1313	2422 025 18166	Connector 16p m
1333	4822 267 10618	Connector 7p
1346	4822 267 10637	Connector 5p m
1355	4822 265 41391	Connector 9p m
1370	4822 267 10637	Connector 5p m

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2000▲	2252 811 95017	470pF 10% 250V
2001	2020 024 90754	100μF 20% 400V
2002	4822 124 11767	470μF 20% 25V
2003	4822 124 80061	1000μF 20% 25V
2004	2222 464 90017	200pF 2% 630V
2005	4822 121 51288	100pF 630V
2007	2020 552 96327	330nF 10% 16V 0805
2008	2020 552 96684	470nF 10% 25V
2010	4822 124 81188	100μF 20% 25V
2011	4822 121 70617	10nF 5% 1.6kV
2012	4822 126 13862	1.5nF 10% 2kV
2013	4822 126 13862	1.5nF 10% 2kV
2014	4822 126 13451	2.2nF 10% 2kV
2015	5322 126 11583	10nF 10% 50V 0603
2016	2238 586 59812	100nF 20-80% 50V 0603
2017	4822 121 70617	10nF 5% 1.6kV
2019	5322 126 11583	10nF 10% 50V 0603
2020	2020 021 91551	2200μF 20% 25V
2022	4822 124 11583	2200μF 20% 35V
2023	2238 586 59812	100nF 20-80% 50V 0603
2024	2238 586 59812	100nF 20-80% 50V 0603
2025	4822 121 51319	1μF 10% 63V
2026	4822 126 14238	2.2nF 50V 0603
2027	3198 017 31530	15nF 20% 50V 0603
2028	5322 126 11578	1nF 10% 50V 0603
2029	5322 126 11578	1nF 10% 50V 0603
2033	2020 552 96683	220nF 10% 50V
2034	2020 552 96683	220nF 10% 50V
2035	2020 552 96683	220nF 10% 50V
2036	2020 552 96683	220nF 10% 50V
2038	4822 124 11583	2200μF 20% 35V
2040	4822 126 14249	560pF 10% 50V 0603
2041	5322 121 10472	47μF
2042	5322 121 10472	47μF
2044	5322 126 11578	1nF 10% 50V 0603
2045	5322 126 11578	1nF 10% 50V 0603
2046	3198 017 34730	47nF 16V 0603
2047	5322 126 11583	10nF 10% 50V 0603
2048	5322 126 11583	10nF 10% 50V 0603
2050	5322 126 11578	1nF 10% 50V 0603
2060	4822 126 14238	2.2nF 50V 0603
2061	4822 126 14238	2.2nF 50V 0603
2062	4822 126 14238	2.2nF 50V 0603
2063	4822 126 13881	470pF 5% 50V
2064	4822 126 13881	470pF 5% 50V
2065	4822 126 14238	2.2nF 50V 0603
2071	5322 126 11578	1nF 10% 50V 0603
2072	5322 126 11578	1nF 10% 50V 0603
2077	4822 126 14238	2.2nF 50V 0603
2290	5322 126 11583	10nF 10% 50V 0603
2291	5322 126 11578	1nF 10% 50V 0603
2292	2020 021 91354	1000μF 20% 50V
2293	5322 126 11578	1nF 10% 50V 0603
2294	2020 021 91354	1000μF 20% 50V

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3000▲	4822 052 10478	4.7Ω 5% 0.33W
3001	4822 116 52175	100Ω 5% 0.5W
3002	4822 051 30223	22kΩ 5% 0.062W
3003	4822 117 13632	100kΩ 1% 0.62W 0603
3004	4822 051 30273	27kΩ 5% 0.062W
3005	4822 051 30333	33kΩ 5% 0.062W
3006	4822 051 30103	10kΩ 5% 0.062W
3007	4822 051 30103	10kΩ 5% 0.062W
3008	4822 051 30471	470Ω 5% 0.062W
3009	4822 051 30332	3.3kΩ 5% 0.062W
3010	4822 051 30471	470Ω 5% 0.062W
3011	4822 051 30471	470Ω 5% 0.062W
3012	4822 051 30153	15kΩ 5% 0.062W
3013	4822 051 30103	10kΩ 5% 0.062W
3014▲	4822 052 10101	100Ω 5% 0.33W
3015▲	4822 052 10479	47Ω 5% 0.33W
3016	4822 051 30222	2.2kΩ 5% 0.062W
3017▲	4822 052 10101	100Ω 5% 0.33W
3018▲	4822 052 10479	47Ω 5% 0.33W
3019	4822 051 30222	2.2kΩ 5% 0.062W
3020	4822 051 30222	2.2kΩ 5% 0.062W
3021	4822 053 10109	10Ω 5% 1W
3022	4822 051 30681	680Ω 5% 0.062W
3023	4822 051 30223	22kΩ 5% 0.062W
3024	5322 117 13024	33kΩ 1% 0.063W 0603
3025	4822 117 12903	1.8kΩ 1% 0.063W 0603
3026	4822 101 11383	470Ω 30% LIN
3027	4822 117 13632	100kΩ 1% 0.62W 0603
3029	4822 051 30222	2.2kΩ 5% 0.062W
3030	4822 051 30183	18kΩ 5% 0.062W
3031	4822 053 11154	150kΩ 5% 2W
3032	4822 053 11154	150kΩ 5% 2W
3034	4822 051 30102	1kΩ 5% 0.062W
3040	4822 051 20752	7.5kΩ 5% 0.1W
3041	4822 051 30333	33kΩ 5% 0.062W
3043	4822 051 30109	10Ω 5% 0.062W
3047	4822 051 30479	47Ω 5% 0.062W
3048	4822 051 30272	2.7kΩ 5% 0.062W
3050	4822 050 28204	820kΩ 1% 0.6W
3052	2322 704 61603	16kΩ 1% 0603
3053	4822 050 26804	680kΩ 1% 0.6W
3055	4822 051 30109	10Ω 5% 0.062W
3056	4822 051 30681	680Ω 5% 0.062W
3057	4822 051 30221	220Ω 5% 0.062W
3058	4822 053 20565	5.6MΩ 5% 0.25W
3061	4822 051 30683	68kΩ 5% 0.062W
3064	4822 051 30103	10kΩ 5% 0.062W
3065	4822 051 30682	6.8kΩ 5% 0.062W
3066	4822 051 30103	10kΩ 5% 0.062W
3067	4822 051 30101	100Ω 5% 0.062W
3068	4822 051 30222	2.2kΩ 5% 0.062W
3070	4822 051 30102	1kΩ 5% 0.062W
3071	4822 051 30103	10kΩ 5% 0.062W
3072	9337 224 60116	Temp sens. KTY81-220
3075	4822 051 30102	1kΩ 5% 0.062W
3292	4822 051 30561	560Ω 5% 0.062W
3300	4822 050 11002	1kΩ 1% 0.4W
3999	4822 051 10102	1kΩ 2% 0.25W
9054	4822 051 20008	Jumper 0805
9055	4822 051 20008	Jumper 0805
9056	4822 051 20008	Jumper 0805
9057	4822 051 20008	Jumper 0805

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5001	2422 531 02444	Transformer S13932-04Y
5002	3104 308 20802	Transformer BS42234-02
5003	4822 157 71442	150μH 10%
5004	4822 526 10704	Bead 45Ω at 50MHz
5005	4822 157 11411	Bead 83Ω at 100MHz
5007	4822 157 11411	Bead 83Ω at 100MHz
5008	4822 157 11411	Bead 83Ω at 100MHz
5009	4822 157 11411	Bead 83Ω at 100MHz
5010	4822 157 11411	Bead 83Ω at 100MHz
5013	4822 157 11411	Bead 83Ω at 100MHz
5015	4822 157 11411	Bead 83Ω at 100MHz
5016	4822 157 11411	Bead 83Ω at 100MHz
5017	4822 526 10704	Bead 45Ω at 50MHz
5025	4822 157 11411	Bead 83Ω at 100MHz
5026	4822 157 11411	Bead 83Ω at 100MHz
5027	4822 157 11411	Bead 83Ω at 100MHz
5028	4822 157 11411	Bead 83Ω at 100MHz
5040	4822 157 11411	Bead 83Ω at 100MHz
5041	4822 526 10704	Bead 45Ω at 50MHz
5291	4822 157 71467	39μH 10%
5292	4822 157 71467	39μH 10%
5293	4822 157 71467	39μH 10%

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6002	4822 130 11397	BAS316
6003	4822 130 11397	BAS316
6004	4822 130 11397	BAS316
6005	4822 130 11397	BAS316
6006	4822 130 11397	BAS316
6007	4822 130 11397	BAS316
6008	4822 130 11397	BAS316
6009	9340 548 66115	PDZ20B
6010	4822 130 11397	BAS316
6011	4822 130 11397	BAS316

6012	4822 130 34281	BZX79-B15
6013	4822 130 34281	BZX79-B15
6017	4822 130 11397	BAS316
6020	4822 130 11397	BAS316
6021	9322 167 08687	STTH2003CF
6022	3198 020 55680	BZX384-C5V6
6023	4822 130 11397	BAS316
6027	4822 130 11397	BAS316
6028	4822 130 11397	BAS316
6044	9322 173 47687	STPS20L40CFP
6051	4822 130 11397	BAS316
6078	4822 130 11044	BYV26D
6079	4822 130 30621	1N4148
6081	4822 130 34441	BZX79-B22
6291	4822 130 11596	BYW29EX-200
6293	4822 130 11596	BYW29EX-200

7001	9322 108 21682	MC34067P
7002	9322 149 04682	TCET1102
7003	3198 010 42310	BC847BW
7005	9322 192 18687	STP15NK50ZFP
7006	9322 192 18687	STP15NK50ZFP
7007	3198 010 42320	BC857BW
7008	3198 010 42320	BC857BW
7009	3198 010 42320	BC857BW
7010	4822 209 81397	TL431CLPST
7011	4822 209 12334	L4940V85
7017	3198 010 42320	BC857BW
7018	3198 010 42310	BC847BW

Power supply [SP]

Various

0308	2422 025 16374	Connector 2p m
1309	2422 025 16374	Connector 2p m
1333	4822 267 10618	Connector 7p
1400▲	4822 253 50145	Fuse 3.15A T
1401▲	4822 265 11253	Fuse holder 2p
1402	4822 252 60151	Sparkgap dsp501
1450	2422 132 07411	Relay 1p 5V 5A

2400	4822 126 13589	470nF 275V
2401	4822 126 13589	470nF 275V
2405▲	2252 811 95065	220pF 10% 250V
2502	2252 561 95045	68pF 5% 1kV
2503	2020 024 90718	10µF 20% 450V
2504	5322 126 11578	1nF 10% 50V 0603
2506▲	2252 811 95021	1nF 10% 250V
2507	4822 126 13682	100pF 5% 1kV
2508	4822 124 40764	22µF 100 V
2509	5322 122 32818	2.2nF 10% 100V
2510	2020 021 91794	1000µF 20% 16V
2511	2238 586 59812	100nF 20-80% 50V 0603
2512	2238 586 59812	100nF 20-80% 50V 0603
2513	2238 586 59812	100nF 20-80% 50V 0603
2514	4822 121 43913	470nF 10% 100V
2515	4822 126 13682	100pF 5% 1kV
2533	4822 124 40207	100µF 20% 25V
2534	4822 124 40248	10µF 20% 63V
2535	5322 126 11583	10nF 10% 50V 0603
2536	4822 122 33177	10nF 20% 50V
2537	4822 122 33127	2.2nF 10% 63V
2538	4822 122 33177	10nF 20% 50V
2539	4822 124 21913	1µF 20% 63V
2801	2222 365 55563	56nF 10% 400V
2802	2222 365 55563	56nF 10% 400V
2815	4822 124 42159	330µF 20% 400V
2817	4822 121 70162	10nF 5% 400V

3400▲	2122 550 00158	VDR 1mA 612V
3401	4822 053 21475	4.7MΩ 5% 0.5W
3402	4822 053 21475	4.7MΩ 5% 0.5W
3403	4822 053 21475	4.7MΩ 5% 0.5W
3404	4822 116 83872	220Ω 5% 0.5W
3460	4822 051 30682	6.8kΩ 5% 0.062W
3461	4822 051 30472	4.7kΩ 5% 0.062W
3501	4822 116 52228	680Ω 5% 0.5W
3502	4822 051 30332	3.3kΩ 5% 0.062W
3503	5322 117 13026	4.7kΩ 1% 0.063W 0603
3505	4822 117 13085	5.6kΩ 1% 0.1W 0805
3506	4822 051 20471	470Ω 5% 0.1W
3507	4822 053 20225	2.2MΩ 5% 0.25W
3509	4822 116 83961	6.8kΩ 5%
3510	4822 116 83961	6.8kΩ 5%
3511	4822 116 83884	47kΩ 5% 0.5W
3512	4822 051 30471	470Ω 5% 0.062W
3513	4822 051 30103	10kΩ 5% 0.062W
3514	4822 051 30102	1kΩ 5% 0.062W
3515	4822 117 10833	10kΩ 1% 0.1W
3516▲	4822 052 10688	6.8Ω 5% 0.33W
3517	4822 116 83868	150Ω 5% 0.5W
3518	4822 117 10833	10kΩ 1% 0.1W
3519	4822 051 10102	1kΩ 2% 0.25W
3520	4822 117 11507	6.8kΩ 1% 0.1W
3521	4822 051 20273	27kΩ 5% 0.1W
3522	4822 117 10361	680Ω 1% 0.1W
3523	4822 117 10833	10kΩ 1% 0.1W
3524	4822 117 11449	2.2kΩ 5% 0.1W 0805
3525	4822 051 20471	470Ω 5% 0.1W
3526	4822 051 30101	100Ω 5% 0.062W
3528	4822 051 20472	4.7kΩ 5% 0.1W
3529	4822 051 30101	100Ω 5% 0.062W
3530	4822 051 20223	22kΩ 5% 0.1W
3531	4822 051 30153	15kΩ 5% 0.062W
3532	4822 116 52283	4.7kΩ 5% 0.5W
3533	4822 116 83961	6.8kΩ 5%
3534	4822 051 20223	22kΩ 5% 0.1W
3535	4822 117 10833	10kΩ 1% 0.1W
3536	4822 117 11449	2.2kΩ 5% 0.1W 0805
3537	4822 117 11373	100Ω 1% 0805
3538	4822 051 30101	100Ω 5% 0.062W
3539	4822 117 11373	100Ω 1% 0805
3999	4822 051 10102	1kΩ 2% 0.25W
9004	4822 051 20008	Jumper 0805
9912	4822 051 20008	Jumper 0805

5401	2422 549 43291	Filter 47mH 2A
5402	2422 549 43291	Filter 47mH 2A
5403	2422 549 44698	Filter 20mH
5500▲	3104 308 20882	Transformer BS16301
5502	4822 526 10704	Bead 45Ω at 50MHz
5503	4822 526 10704	Bead 45Ω at 50MHz
5506	4822 157 71467	39µH 10%

6460	4822 130 11397	BAS316
6461	4822 130 11397	BAS316
6462	4822 130 11397	BAS316
6463	4822 130 11397	BAS316
6501	9336 018 60133	BZT03-C300
6502	9336 018 60133	BZT03-C300
6503	4822 130 41487	BYV95C
6504	9340 418 70133	BYV27-600
6505	9322 161 76682	SB340L-7024
6506	4822 130 83147	DF06M
6507	4822 130 11397	BAS316
6515	4822 130 11397	BAS316
6516	3198 020 55680	BZX384-C5V6
6517	4822 130 11397	BAS316
6519	4822 130 11397	BAS316
6531	4822 130 31024	BZX79-B18
6532	4822 130 11397	BAS316
6807	9322 199 39682	GBJ6J-B12

7460	9340 219 30115	BC817-25W
7500	9322 185 00682	TNY266P
7501▲	9322 149 04682	TCET1102
7502	4822 209 81397	TL431CLPST
7503	5322 130 60159	BC846B
7504	5322 130 60159	BC846B
7505	4822 130 60373	BC856B
7506	5322 130 60159	BC846B
7507	5322 130 60159	BC846B
7508	5322 130 60159	BC846B
7531	4822 130 11336	STP16NE06FP
7532	3198 010 42310	BC847BW

11. Revision List

11.1 Manual xxxx xxx xxxx.0

- First release.

11.2 Manual xxxx xxx xxxx.1 (internal release, not published).

- Some pictures renamed.
- Some small spelling mistakes corrected.

11.3 Manual xxxx xxx xxxx.2

- Chapter 1: ITV connections added.
- Chapter 4: Some pictures updated.
- Chapter 5:
  - Error "76" added.
  - Figure "Stepwise start-up diagram" updated.
  - ITV information added.
- Chapter 6: Updated with ITV information (wiring, block diagram audio) and some small corrections on I2C overview.
- Chapter 7: ITV versions of side I/O (O) and LED/Switch panel (LD) added, plus some small corrections.
- Chapter 8: ITV "Hotel" mode option settings added, general update of option tables.
- Chapter 10: ITV models added and parts list updated for other sets.
- Other chapters: small updates and corrections.

11.4 Manual xxxx xxx xxxx.3

- Information of the FTL13E AB chassis added.
  During production a different video switch (item 7D51 on B19a of the SSB is used. A new PWB layout is created and some schematics are updated.
- Chapter 7: Schematics and PWB layout of updated SSB are added.
  - Only changed schematics are added..
  - Schematic B16a-B16d are added, these schematics are not used (no components are mounted) but are published to have a complete overview.
- Chapter 10: Spare Part List of FTL13E AB SSB is added
- Some small layout and text changes are made in the text chapters.